0//15/2016	Kit Components	071-760
Product code	Description	
XINF-KIT-10	Custom Organic Calib	ration Standards Kit
Components:		
CLPV-AH	VO IND. BLENDS MIX	A
CLPV-041X	Supplementary Volatiles	Mix for CLP OLM04
NEAT-2125	n-Heptane	
NEAT-2458	METHYL SALICYLAT	E
NEAT-3505	TOLUENE	
NEAT-865	CHLOROFORM	
P-GAS	Purgeable Aromatics for	Gasoline Identification
S-2125-200	Heptane	
XINF-IS-4	CUSTOM INT STD	

TRIHALOMETHANES

Custom 5 compound organic standard

METHANOL

THM-X-400

XQ-1314

XS-2380-30ML

Reviewed on 07/15/2016

1 Identification

- · Product identifier
- · Product Name: VO IND. BLENDS MIX A
- · Part Number: CLPV-AH
- · Application of the substance / the mixture Certified Reference Material
- · Details of the supplier of the safety data sheet
- · Manufacturer/Supplier: SPEX CertiPrep, LLC. 203 Norcross Ave. Metuchen, NJ 08840 USA
- Information department: product safety department
- · Emergency telephone number: Emergency Phone Number (24 hours) CHEMTREC (800-424-9300) Outside US: 703-527-3887

2 Hazard(s) identification

· Classification of the substance or mixture



GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.



GHS06 Skull and crossbones

Acute Tox: 3 H331 Toxic if inhaled.



GHS08 Health hazard

Carc. 1B H350 May cause cancer.

H361 Suspected of damaging fertility or the unborn child. Repr. 2

STOT SE 1 H370 Causes damage to organs.

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

- Label elements
- GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
- Hazard pictograms







GHS08

GHS02

GHS06

- · Signal word Danger
- · Hazard-determining components of labeling: methanol

1,2-dichloroethane carbon tetrachloride

1.1,2,2-tetrachloroethane

· Hazard statements

H225 Highly flammable liquid and vapor.

H331 Toxic if inhaled.

H350 May cause cancer.

H361 Suspected of damaging fertility or the unborn child.

H370 Causes damage to organs.

H373 May cause damage to organs through prolonged or repeated exposure.

· Precautionary statements

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Use explosion-proof electrical/ventilating/lighting/equipment.

Do not breathe dust/fume/gas/mist/vapors/spray.

If on skin (or hair). Take off immediately all contaminated clothing. Rinse skin with water/shower.

(Contd. on page 2)

Reviewed on 07/15/2016

(Contd, of page 1)

Product Name: VO IND. BLENDS MIX A

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations,

- · Classification system:
- · NFPA ratings (scale 0 4)



Health = 3 Fire = 3 Reactivity = 0

· HMIS-ratings (scale 0 - 4)



Health = *3 Fire = 3 Reactivity = 0

- · Other hazards
- · Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · vPvB: Not applicable.

3 Composition/information on ingredients

· Description: Mixture of the substances listed below with nonhazardous additions.

	us components:	* * * * * * * * * * * * * * * * * * * *
	methanol	97.0%
	1,1-dichloroethylene	0.2%
	1,1,2-trichloroethane	0.2%
79-34-5	1,1,2,2-tetrachloroethane	0.2%
107-06-2	1,2-dichlorocthane	0.2%
	carbon tetrachloride	0.2%
67-66-3	chloroform	0.2%
127-18-4	tetrachloroethylene	0.2%
79-01-6	trichloroethylene	0.2%
75-09-2	dichloromethane	0.2%
· Chemical	identification of the substance/preparation	
75-34-3	1,1-dichloroethane	0.2%
78-87-5	1,2-dichloropropane	0.2%
75-25-2	bromoform	0.2%
108-90-7	chlorobenzene	0.2%
124-48-1	dibromochloromethane	
	trans-dichloroethylene	0.2%
		0.2%

4 First-aid measures

- · Description of first aid measures
- · General information:

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

Remove breathing apparatus only after contaminated clothing have been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration.

· After inhalation:

Supply fresh air or oxygen; call for doctor.

In case of unconsciousness place patient stably in side position for transportation.

- · After skin contact: Immediately wash with water and soap and rinse thoroughly.
- After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
- · After swallowing: Do not induce vomiting; immediately call for medical help.
- · Information for Doctor:
- · Most important symptoms and effects, both acute and delayed No further relevant information available.
- Indication of any immediate medical attention and special treatment needed No further relevant information available,

US

Printing date 07/15/2016 Reviewed on 07/15/2016

Product Name: VO IND. BLENDS MIX A

(Contd. of page 2)

5 Fire-fighting measures

- · Extinguishing media
- · Suitable extinguishing agents: CO2, sand, extinguishing powder. Do not use water.
- · For safety reasons unsuitable extinguishing agents: Water with full jet
- · Special hazards arising from the substance or mixture No further relevant information available.
- · Advice for firefighters
- · Protective equipment: Mouth respiratory protective device.

6 Accidental release measures

- · Personal precautions, protective equipment and emergency procedures Wear protective equipment. Keep unprotected persons away.
- · Environmental precautions:

Do not allow product to reach sewage system or any water course.

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers/ surface or ground water.

· Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents

· Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage

- · Handling:
- · Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Prevent formation of aerosols.

· Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Keep respiratory protective device available.

- · Conditions for safe storage, including any incompatibilities
- · Storage:
- · Requirements to be met by storerooms and receptacles; Store in a cool location.
- · Information about storage in one common storage facility: Not required.
- · Further information about storage conditions:

Keep receptacle tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

· Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- · Additional information about design of technical systems: No further data; see item 7.
- · Control parameters
- · Components with limit values that require monitoring at the workplace:

67-56-1 methanol

PEL Long-term value: 260 mg/m3, 200 ppm

REL Short-term value: 325 mg/m³, 250 ppm Long-term value: 260 mg/m³, 200 ppm

Chin

TLV Short-term value: 328 mg/m³, 250 ppm Long-term value: 262 mg/m³, 200 ppm

Skin; BEI

75-35-4 1.1-dichloroethylene

REL See Pocket Guide App.A

TLV Long-term value: 20 mg/m3, 5 ppm

(Contd. on page 4)

Product Name: VO IND. BLENDS MIX A

79-0	0-5 1,1,2-trichloroethane	
PEL	Long-term value: 45 mg/m³, 10 ppm	
	Skin	
REL	Long-term value; 45 mg/m ¹ , 10 ppm	
	Skin; See Pocket Guide Apps A and C	
TLV	Long-term value: 55 mg/m [‡] , 10 ppm	
	Skin	
79-3-	4-5 1,1,2,2-tetrachloroethane	*
	Long-term value: 35 mg/m³, 5 ppm	
	Skin	
REL	Long-term value: 7 mg/m³, 1 ppm	
	Skin; See Pocket Guide Apps. A and C	
TLV	Long-term value: 6.9 mg/m³, 1 ppm	
	Skin	
107-	06-2 1,2-dichloroethane	
_	Long-term value: 50 ppm	
	Ceiling limit value: 100; 200* ppm	
	*5-min peak in any 3 hrs	
REL	Short-term value: 8 mg/m³, 2 ppm	
	Long-term value: 4 mg/m³, 1 ppm	
	See Pocket Guide Apps, A and C	
TLV	Long-term value: 40 mg/m³, 10 ppm	
56-2.	3-5 carbon tetrachloride	
PEL	Long-term value: 10 ppm	
	Ceiling limit value; 25; 200* ppm	
	*5-min peak in any 3 hrs	
REL	Short-term value: 12.6* mg/m³, 2* ppm	
	*60-min; See Pocket Guide App. A	
TLV	Short-term value: 63 mg/m ² , 10 ppm	
	Long-term value: 31 mg/m ¹ , 5 ppm	
	Skin	
67-6	6-3 chloroform	
PEL	Ceiling limit value: 240 mg/m ³ , 50 ppm	
	Short-term value: 9.78* ing/m³, 2* ppm	
	*60-min; See Pocket Guide App. A	
TLV	Long-term value: 49 mg/m³, 10 ppm	
	18-4 tetrachloroethylene	
PEL	Long-term value: 100 ppm Ceiling limit value: 200; 300* ppm	
	*5-min peak in any 3 hrs	
DEI	Minimize workplace exp. concs.; Pocket Guide App. A	
ILV	Short-term value: 685 mg/m³, 100 ppm Long-term value: 170 mg/m³, 25 ppm	
	BEI	
70.0	I-6 trichloroethylene	
PEL	Long-term value: 100 ppm Ceiling limit value: 200; 300* ppm	
	*5-min peak in any 2 hrs	
DEI	See Pocket Guide Apps, A and C	
	1,	
ILV	Short-term value: 135 mg/m³, 25 ppm	
	Long-term value: 54 mg/m³, 10 ppm BEI	
75 0	9-2 dichloromethane	
-		
PEL	Short-term value: 125 ppm	
	Long-term value: 25 ppm see 29 CFR 1910.1052	
ner		
	See Pocket Guide App. A	
TLV	Long-term value: 174 mg/m³, 50 ppm	
	BEI	

Reviewed on 07/15/2016

Product Name: VO IND. BLENDS MIX A

(Contd. of page 4)

Ingredients with biological limit values:

67-56-1 methanol

BEI 15 mg/L

Medium: urine Time: end of shift

Parameter: Methanol (background, nonspecific)

127-18-4 tetrachloroethylene

BEI 3 ppm

Medium: end-exhaled air Time: prior to shift

Parameter: Tetrachloroethylene

0.5 mg/L Medium: blood Time: prior to shift

Parameter: Tetrachloroethylene

79-01-6 trichloroethylene

BEI 15 mg/L

Medium: urine

Time: end of shift at end of workweek Parameter: Trichloroacetic acid (nonspecific)

0.5 mg/L Medium: blood

Time: end of shift at end of workweek

Parameter: Trichloroethanol without hydrolysis (nonspecific)

Medium: blood

Time: end of shift at end of workweek

Parameter: Trichloroethylene (semi-quantitative)

Medium: end-exhaled air

Time: end of shift at end of workweek

Parameter: Trichloroethylene (semi-quantitative)

75-09-2 dichloromethane

BEI 0.3 mg/L

Medium: urine Time: end of shift

Parameter: Dichloromethane (semi-quantitative)

- Additional information: The lists that were valid during the creation were used as basis.
- · Exposure controls
- · Personal protective equipment:
- General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed,

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work. Store protective clothing separately.

Avoid contact with the eyes and skin.

Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

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Product Name: VO IND. BLENDS MIX A

(Contd. of page 5)

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed. · Eye protection:



Tightly sealed goggles

Information on basic physical and of	chemical properties
General Information Appearance:	
Form:	I family
Color:	Liquid According to product specification
Odor:	Characteristic
Odour Threshold:	Not applicable.
pH-value:	Not applicable.
Change in condition	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	64 °C (147 °F)
Flash point:	11 °C (52 °F)
Flammability (solid, gaseous):	Not applicable.
Ignition temperature:	455 °C (851 °F)
Decomposition temperature:	Not applicable.
Auto igniting:	Product is not selfigniting.
Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
Explosion limits:	
Lower:	5.5 Vol %
Upper:	44.0 Vol %
Vapor pressure at 20 °C (68 °F):	128 hPa (96 mm Hg)
Density at 20 °C (68 °F)	0.81232 g/cm ³ (6.779 lbs/gal)
Relative density	Not applicable.
Vapor density	Not applicable.
Evaporation rate	Not applicable.
Solubility in / Miscibility with	
Water:	Not miscible or difficult to mix.
Partition coefficient (n-octanol/wate	er): Not applicable.
Viscosity:	
Dynamic:	Not applicable.
Kinematic:	Not applicable,
Solvent content:	
Organic solvents:	98.4 %
VOC content:	98.0 %
Other information	No further relevant information available.

10 Stability and reactivity

- · Reactivity No further relevant information available.
- · Chemical stability
- · Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · Possibility of hazardous reactions No dangerous reactions known.
- · Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.
- · Hazardous decomposition products: No dangerous decomposition products known.

Product Name: VO IND. BLENDS MIX A

(Contd. of page 6)

11 Toxicological information · Information on toxicological effects Acute toxicity: · LD/LC50 values that are relevant for classification: 67-56-1 methanol Oral | LD50 | 5628 mg/kg (rat) Dermal LD50 | 15800 mg/kg (rabbit) 79-34-5 1,1,2,2-tetrachloroethane Oral LD50 800 mg/kg (rat) 107-06-2 1,2-dichloroethane LD50 670 mg/kg (rat) Oral Dermal LD50 2800 mg/kg (rat) 56-23-5 carbon tetrachloride Oral LD50 2350 mg/kg (rat) Dermal LD50 5070 mg/kg (rat) 79-01-6 trichloroethylene Oral LD50 2402 mg/kg (mouse) Dermal LD50 8450 mg/kg (mouse) · Primary irritant effect: · on the skin: No irritant effect. · on the eye: No irritating effect. · Sensitization: No sensitizing effects known. · Additional toxicological information: The product shows the following dangers according to internally approved calculation methods for preparations: Toxic Carcinogenic. · Carcinogenic categories · IARC (International Agency for Research on Cancer) 75-35-4 1,1-dichloroethylene 79-00-5 1,1,2-trichloroethane 3 79-34-5 1,1,2,2-tetrachloroethane 2B 78-87-5 1,2-dichloropropane 3 107-06-2 1,2-dichloroethane 2B75-25-2 bromoform 3 56-23-5 carbon tetrachloride <u>2B</u> 67-66-3 chloroform 2B 124-48-1 dibromochloromethane 3 127-18-4 tetrachloroethylene 2A79-01-6 trichloroethylene \overline{I} 75-09-2 dichloromethane 28 · NTP (National Toxicology Program) 107-06-2 1,2-dichloroethane R 56-23-5 carbon tetrachloride R 67-66-3 chloroform R 127-18-4 tetrachloroethylene R 79-01-6 trichloroethylene R 75-09-2 dichloromethane R · OSHA-Ca (Occupational Safety & Health Administration)

12 Ecological information

75-09-2 dichloromethane

- · Toxicity
- · Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.

(Contd. on page 8)

(Contd. of page 7)

US

Product Name: VO IND. BLENDS MIX A

· Mobility in soil No further relevant information available.

· Additional ecological information:

· General notes:

Water hazard class 3 (Self-assessment): extremely hazardous for water

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into the ground.

· Results of PBT and vPvB assessment

- PBT: Not applicable.

· vPvB: Not applicable.

· Other adverse effects No further relevant information available.

13 Disposal considerations

- · Waste treatment methods
- · Recommendation: Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- · Uncleaned packagings:
- · Recommendation: Disposal must be made according to official regulations.

Transport information		
UN-Number DOT, ADR, IMDG, IATA	UN1230	
· UN proper shipping name · DOT · ADR · IMDG, IATA	Methanol 1230 Methanol METHANOL	
Transport hazard class(es) DOT		
Class Label	3 Flammable liquids 3, 6.1	
ADR SECTION OF THE PROPERTY OF		
Class Label IMDG	3 Flammable liquids 3+6.1	
Class Label IATA	3 Flammable līquids 3/6.1	
Class Label	3 Flamnable liquids 3 (6.1)	
Packing group DOT, ADR, IMDG, IATA	II	
	(Contd. on p	age

Printing date 07/15/2016 Reviewed on 07/15/2016

Product Name: VO IND. BLENDS MIX A

	(Contd, of page
Environmental hazards:	Not applicable.
Special precautions for user	Warning: Flammable liquids
Danger code (Kemler):	33 6
EMS Number:	F-E,S-D
Stowage Category	В
Stowage Code	SW2 Clear of living quarters.
Transport in bulk according to Annex II of MARPO	L73/78 and the IBC
Code	Not applicable.
Transport/Additional information:	
ADR	
Excepted quantities (EQ)	Code: E2
200	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 500 ml
IMDG	
Limited quantities (LQ)	IL.
Excepted quantities (EQ)	Code: E2
zacepeen dummen (mg/	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging; 500 ml
UN "Model Regulation":	UN 1230 METHANOL. 3 (6.1). II

Regulato	ory information
Safety, he Sara	alth and environmental regulations/legislation specific for the substance or mixture
	SS (extremely hazardous substances):
	l, l-dichloroethane
67-66-3	chloroform
Section 3	13 (Specific toxic chemical listings):
	methanol
75-34-3	1,1-dichloroethane
75-35-4	1,1-dichloroethylene
	1,1,2-trichloroethane
	1,1,2,2-tetrachloroethane
78-87-5	1,2-dichloropropane
107-06-2	1,2-dichloroethane
75-25-2	bromoform
56-23-5	carbon tetrachloride
108-90-7	chlorobenzene
67-66-3	chloroform
127-18-4	tetrachloroethylene
79-01-6	trichloroethylene
75-09-2	dichloromethane
TSCA (To	oxic Substances Control Act):
	fients are listed.
Propositio	
Chemical	ls known to cause cancer:
75-34-3	1,1-dichloroethane
79-00-5	1,1,2-trichloroethane
79-34-5	1.1,2,2-tetrachloroethune
78-87- 5	1,2-dichloropropane
107-06-2	1,2-dichloroethane
75-25-2	bromoform
56-23-5	carbon tetrachloride
	chloroform
127-18-4	tetrachloroethylene trichloroethylene

Product Name: VO IND. BLENDS MIX A

75-09-2 dichloromethane	(Contd. of pag
Chemicals known to cause reproductive toxicity for females:	
None of the ingredients is listed.	
Chemicals known to cause reproductive toxicity for males:	
79-01-6 trichloroethylene	
Chemicals known to cause developmental toxicity:	
67-56-1 methanol	
67-66-3 chloroform	
79-01-6 trichloroethylene	
Carcinogenic categories EPA (Environmental Protection Agency)	
75-34-3 1,1-dichloroethane	
75-35-4 1,1-dichloroethylene	C
79-00-5 1,1,2-trichloroethane	C, S (inh.), I (or
79-34-5 1,1,2,2-tetrachloroethane	C
107-06-2 1,2-dichloroethane	L
75-25-2 bromoform	B2
56-23-5 carbon tetrachloride	B2
108-90-7 chlorobenzene	
67-66-3 chloroform	D
124-48-1 dibromochloromethane	B2, L, NL
127-18-4 tetrachloroethylene	C
156-60-5 trans-dichloroethylene	L
79-01-6 trichloroethylene	
75-09-2 dichloromethane	СаН
TLV (Threshold Limit Value established by ACGIH)	<u>L</u>
75-34-3 1,1-dichloroethane	
75-35-4 1,1-dichloroethylene	
79-00-5 1,1,2-trichloroethane	/
79-34-5 1,1,2,2-tetrachloroethane	
78-87-5 1,2-dickloropropane	
107-06-2 1,2-dichloroethane	
75-25-2 bromoform	
56-23-5 carbon tetrachloride	A
108-90-7 chlorobenzene	I A
67-66-3 chloroform	
127-18-4 tetrachloroethylene	A A
79-01-6 trichloroethylene	
75-09-2 dichloromethane	A A
NIOSII-Ca (National Institute for Occupational Safety and Health)	
75-35-4 1,1-dichloroethylene	
79-00-5 1,1,2-trichloroethane	
79-34-5 1,1,2,2-tetrachloroethane	
78-87-5 1,2-dichloropropane	
107-06-2 1.2-dichloroethane	
56-23-5 carbon tetrachloride	
67-66-3 chloroform	
27-18-4 tetrachloroethylene	
79-01-6 trichloroethylene	
75-09-2 dichloromethane	

(Contd. of page 10)

Product Name: VO IND. BLENDS MIX A

· Hazard pictograms







GHS02

GHS06

GHS08

· Signal word Danger

· Hazard-determining components of labeling:

methanol

1.2-dichloroethane

carbon tetrachloride

1,1,2,2-tetrachloroethane

· Hazard statements

H225 Highly flammable liquid and vapor,

H331 Toxic if inhaled.

H350 May cause cancer.

H361 Suspected of damaging fertility or the unborn child.

H370 Causes damage to organs.

H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

Keep away from heat/sparks/open flames/hot surfaces. No smoking,

Use explosion-proof electrical/ventilating/lighting/equipment.

Do not breathe dust/fume/gas/mist/vapors/spray.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· National regulations:

· Information about limitation of use:

Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- · Department issuing SDS: product safety department
- · Contact:

SPEX CertiPrep, LLC.

1-732-549-7144

- · Date of preparation / last revision 07/15/2016 / -
- · Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation IATA: International Air Transport Association

ACGH. American Conference of Governmental Industrial Hygienists
EINECS: European Inventors of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU) LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit BEI: Biological Exposure Limit

Flam. Liq. 2: Flammable liquids - Category 2 Acute Tox. 3: Acute toxicity - Category 3

Carc. 1B: Carcinogenicity - Category 1B Repr. 2: Reproductive toxicity - Category 2

STOT SE 1. Specific target organ toxicity (single exposure) = Category 1 STOT RE 2: Specific target organ toxicity (repeated exposure) = Category 2

Reviewed on 07/15/2016

I Identification

- · Product identifier
- Product Name: Supplementary Volatiles Mix for CLP OLM04.1
- Part Number: CLPV-041X
- · Application of the substance / the mixture Certified Reference Material
- Details of the supplier of the safety data sheet
- Manufacturer/Supplier: SPEX CertiPrep, LLC.

203 Norcross Ave. Metuchen,

NJ 08840 USA

- Information department: product safety department
- Emergency telephone number: Emergency Phone Number (24 hours)

CHEMTREC (800-424-9300) Outside US: 703-527-3887

2 Hazard(s) identification

Classification of the substance or mixture



GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.



GHS06 Skull and crossbones

Acute Tox. 3 H331 Toxic if inhaled.



GHS08 Health hazard

STOT SE 1 H370 Causes damage to organs.

- · Label elements
- · GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
- · Hazard pictograms







GHS02

GHS06

4205 CH

- Signal word Danger
- · Hazard-determining components of labeling: methanol
- · Hazard statements

H225 Highly flammable liquid and vapor.

H331 Toxic if inhaled.

H370 Causes damage to organs.

· Precautionary statements

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Use explosion-proof electrical/ventilating/lighting/equipment.

Do not breathe dust/fume/gas/mist/vapors/spray.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

- Classification system:
- NFPA ratings (scale 0 4)



Health = 3 Fire = 3 Reactivity = 0

(Contd. of page 1)

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Product Name: Supplementary Volatiles Mix for CLP OLM04.1

Sentings (scale f) - A)

· HMIS-ratings (scale 0 - 4)



- · Other hazards
- · Results of PBT and vPvB assessment

· PBT:

120-82-1 1,2,4-trichlorobenzene

· vPvB: Not applicable.

3 Composition/information on ingredients

· Description: Mixture of the substances listed below with nonhazardous additions.

· Dangerous	s components:	
67-56-1 m	ethanol	99.76%
· Chemical i	identification of the substance/preparation	
79-20-9	methyl acetate	0.02%
108-87-2	methylcyclohexane	0.02%
76-13-1	1,1,2-trichlorotrifluoroethane	0.02%
541-73-1	1,3-dichlorobenzene	0.02%
106-93-4	1,2-dibromoethane	0.02%
96-12-8	1.2-dibromo-3-chloropropane	0.02%
95-50-1	1,2-dichlorobenzene	0.02%
120-82-1	1,2,4-trichlorobenzene	0.02%
106-46-7	1.4-dichlorobenzene	0.02%
110-82-7	cyclohexane	0.02%
1634-04-4	Methyl-tert-butyl ether	0.02%
98-82-8	isopropylbenzene	0.02%

4 First-aid measures

- Description of first aid measures
- · General information:

Immediately remove any clothing soiled by the product.

Remove breathing apparatus only after contaminated clothing have been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration.

After inhalation:

Supply fresh air or oxygen; call for doctor.

In case of unconsciousness place patient stably in side position for transportation.

- · After skin contact: Immediately wash with water and soap and rinse thoroughly.
- · After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor,
- · After swallowing: Do not induce vomiting; immediately call for medical help.
- · Information for Doctor:
- · Most important symptoms and effects, both acute and delayed No further relevant information available.
- · Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

- · Extinguishing media
- · Suitable extinguishing agents: CO2, sand, extinguishing powder, Do not use water.
- · For safety reasons unsuitable extinguishing agents: Water with full jet
- · Special hazards arising from the substance or mixture No further relevant information available.
- · Advice for firefighters
- · Protective equipment: Mouth respiratory protective device.

6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures Wear protective equipment, Keep unprotected persons away.

(Contd. on page 3)

(Contd. of page 2)

Product Name: Supplementary Volatiles Mix for CLP OLM04.1

· Environmental precautions:

Do not allow product to reach sewage system or any water course.

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers/ surface or ground water.

Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust),

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents

· Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage

- · Handling:
- · Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Prevent formation of aerosols.

· Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Keep respiratory protective device available.

- · Conditions for safe storage, including any incompatibilities
- · Storage.
- · Requirements to be met by storerooms and receptacles: Store in a cool location.
- · Information about storage in one common storage facility: Not required.

· Further information about storage conditions:

Keep receptacle tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

· Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- · Additional information about design of technical systems: No further data; see item 7.
- · Control parameters
- · Components with limit values that require monitoring at the workplace:

67-56-1 methanol

PEL Long-term value: 260 mg/m³, 200 ppm

REL Short-term value: 325 mg/m³, 250 ppm Long-term value: 260 mg/m³, 200 ppm

Skin

TLV Short-term value: 328 mg/m³, 250 ppm Long-term value: 262 mg/m³, 200 ppm

Skin; BEI

· Ingredients with biological limit values:

67-56-1 methanol

BEI 15 mg/L

Medium: urine

Time: end of shift

Parameter: Methanol (background, nonspecific)

- Additional information: The lists that were valid during the creation were used as basis.
- Exposure controls
- Personal protective equipment:
- General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin

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Product Name: Supplementary Volatiles Mix for CLP OLM04.1

(Contd. of page 3)

· Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eye protection:



Tightly sealed goggles

9 Physical and chemical propertie	s
· Information on basic physical and c	hemical properties
· General Information	
· Appearance:	
Form:	Liquid
Color:	According to product specification Characteristic
· Odor: · Odour Threshold:	Not applicable.
pH-value:	Not applicable.
· <u> </u>	TWI HIPMEND.
· Change in condition	
Melting point/Melting range: Boiling point/Boiling range:	Undetermined. 64 °C (147 °F)
· Flash point:	11 °C (52 °F)
· Flammability (solid, gaseous):	Not applicable.
· Ignition temperature:	455 °C (851 °F)
· Decomposition temperature:	Not applicable.
- Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· Explosion limits:	
Lower:	5.5 Vol %
Upper:	44.0 Vol %
· Vapor pressure at 20 °C (68 °F):	128 hPa (96 mm Hg)
· Density at 20 °C (68 °F)	0.79119 g/cm³ (6.602 lbs/gal)
Relative density	Not applicable.
· Vapor density	Not applicable.
· Evaporation rate	Not applicable.
· Solubility in / Miscibility with	
Water:	Not miscible or difficult to mix.
· Partition coefficient (n-octanol/wate	er): Not applicable.
· Viscosity:	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
· Solvent content:	
Organic solvents:	99.9 %

Reviewed on 07/15/2016

Product Name: Supplementary Volatiles Mix for CLP OLM04.1

VOC content: 99.9 %
Other information 99.9 %
No further relevant information available.

10 Stability and reactivity

- · Reactivity No further relevant information available.
- · Chemical stability
- · Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · Possibility of hazardous reactions No dangerous reactions known.
- · Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.
- · Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:

· LD/LC	values that are relevant for classification:
67-56-1	ethanol
Oral	D50 5628 mg/kg (rat)
Dermal	D50 15800 mg/kg (rahbit)

- · Primary irritant effect:
- · on the skin: No irritant effect.
- · on the eye: No irritating effect.
- · Sensitization: No sensitizing effects known.
- · Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations: Toxic

· Carcinogenic categories

3
2A
28
3
28
3
2B
R
R
R R
R

12 Ecological information

- · Toxicity
- · Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- · Additional ecological information:
- General notes:

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

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Product Name: Supplementary Volatiles Mix for CLP OLM04.1

· Results of PBT and vPvB assessment

(Contd. of page 5)

PBT:

120-82-1 1.2.4-trichlorobenzene

- · vPvB: Not applicable.
- · Other adverse effects No further relevant information available.

13 Disposal considerations

- · Waste treatment methods
- · Recommendation: Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- · Uncleaned packagings:
- · Recommendation: Disposal must be made according to official regulations.

UN-Number DOT, ADR, IMDG, IATA	UN1230
UN proper shipping name DOT ADR IMDG, IATA	Methanol 1230 Methanol METHANOL
Transport hazard class(es)	
DOT	
ANTONIC DE TOURS	
Class	3 Flammable liquids
Label ADR	3, 6.1
Class	3 Flammable liquids
Lass Label	3 riammanse uquas 3+6.1
IMDG	
Class Label	3 Flanmable liquids 3/6.1
IATA	
Class Label	3 Flammable liquids 3 (6.1)
Packing group DOT, ADR, IMDG, IATA	II.
Environmental hazards:	Not applicable.
Special precautions for user Danger code (Kemler): EMS Number:	Warning: Flammable liquids 336 F-E,S-D
EMS Number:	(Contd. on

Product Name: Supplementary Volatiles Mix for CLP OLM04.1

		ontd. of page 6
· Stowage Category	В	
· Stowage Code	SW2 Clear of living quarters.	
Transport in bulk according to Annex II of MARPOL7	3/78 and the IBC	
Code	Not applicable.	
Transport/Additional information:		
ADR		
Excepted quantities (EQ)	Code: E2	
	Maximum net quantity per inner packaging: 30 ml	
	Maximum net quantity per outer packaging: 500 ml	
IMDG		
Limited quantities (LQ)	1L	
Excepted quantities (EQ)	Code; E2	
	Maximum net quantity per inner packaging: 30 ml	
	Maximum net quantity per outer packaging; 500 ml	
UN "Model Regulation":	UN 1230 METHANOL, 3 (6.1), II	

Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture Sara Section 355 (extremely hazardous substances): None of the ingredients is listed. Section 313 (Specific toxic chemical listings): 67-56-1 methanol 76-13-1 1.1.2-trichlorotrifluoroethane 54-73-1 1.3-dichlorobencene 106-93-4 1.2-dibromoethane 96-12-8 1.2-dibromoethane 96-12-8 1.2-dichlorobencene 106-67-1 1.4-dichlorobencene 106-67-1 1.4-dichlorobencene 106-67-1 1.4-dichlorobencene 106-67-1 1.4-dichlorobencene 106-68-1 1.4-dichlorobencene 106-69-1 1.2-direction of the ingredients are listed Proposition 65 Chemicals known to cause cancer: 106-93-4 1.2-dibromo-3-chloropropane 96-12-8 1.2-dibromo-1-chloropropane 106-69-1 1.4-dichlorobencene 98-82-8 isopropylbencene 106-69-1 1.4-dichlorobencene 98-82-8 isopropylbencene 106-69-1 1.2-dibromo-3-chloropropane 106-69-1 1.3-dichlorobencene 98-82-8 isopropylbencene 106-69-1 1.3-dichlorobencene 106-69-1 1.3-dichlorobencene 106-69-1 1.3-dichlorobencene 106-69-1 1.3-dichlorobencene 106-69-3 1.3-dichlorobencene 106-69-3 1.3-dichlorobencene 106-69-3 1.3-dibromo-shore 106-93-4 1.3-di		
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67-56-1 methanol 76-13-1 1,1,2-trichlorotrifluoroethane 541-73-1 1,3-dichlorobencene 106-93-4 1,2-dibromoethane 96-12-8 1,2-dibromoethane 98-50-1 1,2-dichlorobencene 120-82-1 1,2-dichlorobencene 120-82-1 1,2-dichlorobencene 106-46-7 1,4-dichlorobencene 110-82-1 10,3-40-4 Methyl-tert-buryl ether 98-82-8 isopropylbencene 110-83-1 1,4-dichlorobencene 110-82-1 1,4-dichlorobencene 110-83-1 1,4-dichlorobencene 110-83-1 1,4-dichlorobencene 110-83-1 1,3-distlorobencene 1,4-dichlorobencene 1,4-dichlorobenc		
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Chemicals known to cause reproductive toxicity for females: None of the ingredients is listed. Chemicals known to cause reproductive toxicity for males: 106-93-4 1,2-dibromoethane 96-12-8 1,2-dibromo-3-chloropropane Chemicals known to cause developmental toxicity: 67-56-1 methanol 106-93-4 1,2-dibromoethane Carcinogenic categories EPA (Environmental Protection Agency) 541-73-1 1,3-dichlorobenzene		
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None of the ingredients is listed. Chemicals known to cause reproductive toxicity for males: 106-93-4 1,2-dibromoethane 96-12-8 1,2-dibromo-3-chloropropane Chemicals known to cause developmental toxicity: 67-56-1 methanol 1,2-dibromoethane Carcinogenic categories EPA (Environmental Protection Agency) 541-73-1 1,3-dichlorobenzene		
Chemicals known to cause reproductive toxicity for males: 106-93-4	None of the ingredients is listed	
1.2-dibromoethane 1.2-dibromoethane 1.2-dibromo-3-chloropropane 1.2-dibromo-3-chloropropane 1.2-dibromoethane 1.2-dibromoethane 1.2-dibromoethane 1.2-dibromoethane 1.2-dibromoethane 1.2-dibromoethane 1.3-dichlorobenzene		
96-12-8		
Chemicals known to cause developmental toxicity: 67-56-1 methanol 106-93-4 1,2-dibromoethane Carcinogenic categories EPA (Environmental Protection Agency) 541-73-1 1,3-dichlorobenzene		
67-56-1 methanol 1,2-dibromoethane Carcinogenic categories EPA (Environmental Protection Agency) 541-73-1 1,3-dichlorobenzene D		
1,2-dibromoethane Carcinogenic categories EPA (Environmental Protection Agency) 541-73-1 1,3-dichlorobenzene D		
Carcinogenic categories EPA (Environmental Protection Agency) 541-73-1 1,3-dichlorobenzene		
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EPA (Environmental Protection Agency) 541-73-1 1,3-dichlorobenzene D	Carcinogenic categories	
541-73-1 1,3-dichlorobenzene	EPA (Environmental Protection Agency)	
106.03.4 1.2. dipromosthous		In.
	106-93-4 1,2-dibromoethane	
05 50 1 1 2 4 4 1 4 4 4		
-		(Contd. on page

Product Name: Supplementary Volatiles Mix for CLP OLM04.1

	(Contd. of page 7
120-82-1 1,2,4-trichlorobenzene	D
110-82-7 cyclohexane	/
98-82-8 isopropythenzene	D, CBL
TLV (Threshold Limit Value established by ACGIH)	
76-13-1 [1,1,2-trichlorotrifluoroethane	A·
106-93-4 1,2-dibromoethane	A.
95-50-1 1,2-dichlorobenzene	A-
106-46-7 1,4-dichlorobenzene	A.
1634-04-4 Methyl-tert-butyl ether	A.
NIOSH-Ca (National Institute for Occupational Safety and Health)	
106-93-4 1,2-dibromoethane	
96-12-8 1,2-dibromo-3-chloropropane	
106-46-7 1,4-dichlorobenzene	

GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).

· Hazard pictograms







· Signal word Danger

- · Hazard-determining components of labeling:
- methanol
- Hazard statements

H225 Highly flammable liquid and vapor.

H331 Toxic if inhaled.

H370 Causes damage to organs.

Precautionary statements

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Use explosion-proof electrical/ventilating/lighting/equipment.

Do not breathe dust/fume/gas/mist/vapors/spray.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower,

Dispose of contents/container in accordance with local/regional/national/international regulations.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- · Department issuing SDS: product safety department
- Contact:

SPEX CertiPrep. LLC.

1-732-549-7144

- · Date of preparation / last revision 07/15/2016 / -
- · Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) IMDG: International Maritime Code for Dangerous Goods

BOT: US Department of Transportation

IATA: International Air Transport Association ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 30 percent
LD50: Lethal dose, 50 percent

PBT: Persistent. Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative NIOSII: National Institute for Occupational Safety

OSHA: Occupational Safety & Health TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

BEI: Biological Exposure Limit
Flam. Liq. 2: Flammable liquids — Category 2
Acute Tox. 3: Acute toxicity — Category 3
STOT SE 1: Specific target organ toxicity (single exposure) — Category 1

I Identification

- · Product identifier
- Product Name: n-Heptane
- Part Number: NEAT-2125
- · CAS Number:
- 142-82-5
- · EC number:
- 205-563-8
- Index number:
- 601-008-00-2
- Application of the substance / the mixture Certified Reference Material
- Details of the supplier of the safety data sheet
- Manufacturer/Supplier:
- SPEX CertiPrep, LLC.
- 203 Norcross Ave. Metuchen.
- NJ 08840 USA
- Information department: product safety department
- Emergency telephone number:
- Emergency Phone Number (24 hours)
- CHEMTREC (800-424-9300)
- Outside US: 703-527-3887

2 Hazard(s) identification

Classification of the substance or mixture



GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor,



GHS08 Health hazard

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways,



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

STOT SE 3 H336 May cause drowsiness or dizziness.

- Label elements
- GHS label elements The substance is classified and labeled according to the Globally Harmonized System (GHS).
- Hazard pictograms









GHS02

GHS07

GHS08

- -Signal word Danger
- Hazard-determining components of labeling:
- Hazard statements

H225 Highly flammable liquid and vapor.

H315 Causes skin irritation.

H336 May cause drowsiness or dizziness.

H304 May be fatal if swallowed and enters airways.

Precautionary statements

Keep away from heat/sparks/open flames/hot surfaces. No smoking. Use explosion-proof electrical/ventilating/lighting/equipment.

IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 2)

Reviewed on 07/15/2016

(Contd. of page 1)

Product Name: n-Heptane

· Classification system:

· NFPA ratings (scale 0 - 4)



Health = 1 Fire = 3 Reactivity = 0

· HMIS-ratings (scale 0 - 4)



Health = 1 Fire = 3 Reactivity = 0

- · Other hazards
- · Results of PBT and vPvB assessment
- · PBT: Not applicable
- · vPvB: Not applicable.

3 Composition/information on ingredients

- · Chemical characterization: Substances
- · CAS No. Description
- 142-82-5 hentane
- · Identification number(s)
- · EC number: 205-563-8
- · Index number: 601-008-00-2

4 First-aid measures

- · Description of first aid measures
- After inhalation: In case of unconsciousness place patient stably in side position for transportation.
- · After skin contact: Immediately wash with water and soap and rinse thoroughly,
- After eye contact: Rinse opened eye for several minutes under running water.
- After swallowing: If symptoms persist consult doctor.
- Information for Doctor:
- · Most important symptoms and effects, both acute and delayed No further relevant information available.
- Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

- · Extinguishing media
- · Suitable extinguishing agents: CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- · For safety reasons unsuitable extinguishing agents: Water with full jet
- · Special hazards arising from the substance or mixture No further relevant information available.
- · Advice for firefighters
- · Protective equipment: No special measures required.

6 Accidental release measures

- · Personal precautions, protective equipment and emergency procedures Wear protective equipment. Keep unprotected persons away.
- · Environmental precautions:

Do not allow product to reach sewage system or any water course.

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers/ surface or ground water-

· Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

· Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

US

Reviewed on 07/15/2016

Product Name: n-Heptane

(Contd. of page 2)

7 Handling and storage

- · Handling:
- · Precautions for safe handling No special precautions are necessary if used correctly.
- Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

- · Conditions for safe storage, including any incompatibilities
- · Storage:
- · Requirements to be met by storerooms and receptacles: Store in a cool location.
- · Information about storage in one common storage facility: Not required.
- Further information about storage conditions:

Keep receptacle tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

· Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- · Additional information about design of technical systems: No further data; see item 7.
- · Control parameters
- · Components with limit values that require monitoring at the workplace:

142-82-5 heptane

PEL Long-term value: 2000 mg/m3, 500 ppin

REL Long-term value: 350 mg/m³, 85 ppm

Ceiling limit value: 1800* mg/m3, 440* ppm

*15-min

TLV Short-term value: 2050 mg/m3, 500 ppm Long-term value: 1640 mg/m3, 400 ppm

- · Additional information: The lists that were valid during the creation were used as basis.
- · Exposure controls
- · Personal protective equipment:
- General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Avoid contact with the skin.

Avoid contact with the eyes and skin.

- Breathing equipment: Not required.
- Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection:



Tightly scaled goggles

Product Name: n-Heptane

(Contd. of page 3)

Reviewed on 07/15/2016

Physical and chemical propertie	
Information on basic physical and o	chemical properties
General Information	
Appearance:	
Form:	Liquid
Color:	Colorless
Odor:	Nearly odoriess
Odour Threshold:	Not applicable.
pH-value:	Not applicable.
Change in condition	
Melting point/Melting range:	-90.5 °C (-131 °F)
Boiling point/Boiling range:	98 °C (208 °F)
Flash point:	-4 °C (25 °F)
Flammability (solid, gaseous):	Not applicable,
Ignition temperature:	215 °C (419 °F)
Decomposition temperature:	Not applicable.
Auto igniting:	Not determined.
Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
Explosion limits:	
Lower:	1.1 Vol %
Upper:	6.7 Vol %
Vapor pressure at 20 °C (68 °F):	48 hPa (36 mm Hg)
Density at 20 °C (68 °F)	0.68 g/cm³ (5.675 lhs/gal)
Relative density	Not applicable.
Vapor density	Not applicable.
Evaporation rate	Not applicable.
Solubility in / Miscibility with	
Water at 20 °C (68 °F):	0.05 g/l
Partition coefficient (n-octanol/wate	er): Not applicable.
Viscosity:	
Dynamic at 20 °C (68 °F):	0.4 mPas
Kinematic:	Not applicable.
Organic solvents:	100.0 %
VOC content:	100.0 %
Other information	No further relevant information available.

10 Stability and reactivity

- · Reactivity No further relevant information available.
- · Chemical stability
- · Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · Possibility of hazardous reactions No dangerous reactions known.
- · Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.
- · Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:
- · Primary irritant effect:
- on the skin: Irritant to skin and mucous membranes.
- · on the eye: No irritating effect.
- · Sensitization: No sensitizing effects known.
- · Additional toxicological information:
- · Carcinogenic categories
- · IARC (International Agency for Research on Cancer)

Substance is not listed.

(Contd. on page 5)

Reviewed on 07/15/2016

(Contd. of page 4)

Product Name: n-Heptane

· NTP (National Toxicology Program)

Substance is not listed.

· OSHA-Ca (Occupational Safety & Health Administration)

Substance is not listed.

12 Ecological information

- · Toxicity
- · Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- · Ecotoxical effects:
- · Remark: Very toxic for fish
- · Additional ecological information:
- · General notes:

Water hazard class 2 (Assessment by list): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

Very toxic for aquatic organisms

- · Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · vPvB: Not applicable.
- · Other adverse effects No further relevant information available.

13 Disposal considerations

- · Waste treatment methods
- · Recommendation: Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- · Uncleaned packagings:
- · Recommendation: Disposal must be made according to official regulations.

14 Transport information

- · UN-Number
- · DOT, ADR, IMDG, IATA

UN1206

- · UN proper shipping name · DOT
- $\cdot ADR$
- · IMDG, IATA

1206 Heptanes, ENVIRONMENTALLY HAZARDOUS

HEPTANES

- · Transport hazard class(es)
- · DOT



- · Class Label

3 Flammable liquids

ADR





Class

3 Flammable liquids

(Contd. on page 6)

Printing date 07/15/2016 Reviewed on 07/15/2016

Product Name: n-Heptane

	(Contd. of pag
Label	3
IMDG, IATA	
6	
Class	3 Flammable liquids
Label	3
Packing group	"
DOT, ADR, IMDG, IATA	
Environmental hazards; Special marking (ADR):	Symbol (fish and tree)
Special precautions for user Danger code (Kemler):	Warning: Flammable liquids 33
EMS Number:	F-E,S-D
Stowage Category	B
Transport in bulk according to Annex II of MARPO	DL73/78 and the IBC
Code	Not applicable.
Transport/Additional information:	
ADR	
Excepted quantities (EQ)	Code: E2
	Maximum net quantity per inner packaging: 30 ml
* * * * - * * - *	Maximum net quantity per outer packaging: 500 ml
IMDG	
Limited quantities (LQ)	IL .
Excepted quantities (EQ)	Code: E2
	Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
UN "Model Regulation":	UN 1206 HEPTANES, 3, II, ENVIRONMENTALLY HAZARDOUS

Safety, health and environmental regulations/legislation specific for the substance or mixture Sara	
Section 355 (extremely hazardous substances):	
Substance is not listed.	
Section 313 (Specific toxic chemical listings):	
Substance is not listed.	
TSCA (Toxic Substances Control Act):	
Substance is listed.	
Proposition 65	
Chemicals known to cause cancer:	
Substance is not listed.	
Chemicals known to cause reproductive toxicity for females:	
Substance is not listed.	100
Chemicals known to cause reproductive toxicity for males:	Of the state of th
Substance is not listed.	
Chemicals known to cause developmental toxicity:	
Substance is not listed.	
Carcinogenic categories	
EPA (Environmental Protection Agency)	
142-82-5 heptane	
TLV (Threshold Limit Value established by ACGIH)	
Substance is not listed.	

Product Name: n-Heptane

· GHS label elements The substance is classified and labeled according to the Globally Harmonized System (GHS).

(Contd. of page 6)

· Hazard pictograms







GHS02

· Signal word Danger

· Hazard-determining components of labeling:

heptane

· Hazard statements

H225 Highly flammable liquid and vapor.

H315 Causes skin irritation.

H336 May cause drowsiness or dizziness.

H304 May be fatal if swallowed and enters airways.

· Precautionary statements

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Use explosion-proof electrical/ventilating/lighting/equipment.

IF SWALLOWED: Immediately call a POISON CENTER/doctor.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship,

· Department issuing SDS: product safety department

· Contact:

SPEX CertiPrep, LLC.

1-732-549-7144

· Date of preparation / last revision 07/15/2016 / -

Abbreviations and acronyms:

ADR. Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

CAS: Chemical Abstracts Service (division of the American Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)
PBT: Persistent, Bioaccumulative and Toxic

PBT Prisistent, Burnes unmanive una coans vPvB, very Persistent and very Bioaccumulative NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit Flam. Liq. 2: Flammable liquids - Category 2

Skin Irrit. 2: Skin corrosion/irritation - Category 2 STOT SE 3: Specific target organ toxicity (single exposure) - Category 3

Asp. Tox. 1: Aspiration hazard - Category 1

Reviewed on 07/15/2016

1 Identification

- · Product identifier
- · Product Name: METHYL SALICYLATE
- · Part Number: NEAT-2458
- · CAS Number: 119-36-8
- · EC number:

204-317-7

- · Application of the substance / the mixture Certified Reference Material
- · Details of the supplier of the safety data sheet
- · Manufacturer/Supplier: SPEX CertiPrep, LLC. 203 Norcross Ave, Metuchen,

NJ 08840 USA

- · Information department: product safety department
- · Emergency telephone number: Emergency Phone Number (24 hours) CHEMTREC (800-424-9300) Outside US: 703-527-3887

2 Hazard(s) identification

Classification of the substance or mixture



GHS02 Flame

Flam. Liq. 3 H226 Flammable liquid and vapor.



Acute Tox. 4 H302 Harmful if swallowed.

Eye Irrit. 2A H319 Causes serious eye irritation.

- · Label elements
- GIIS label elements The substance is classified and labeled according to the Globally Harmonized System (GHS).
- Hazard pictograms





GHS02

GHS07

- · Signal word Warning
- · Hazard-determining components of labeling:

methyl salicylate

Hazard statements

H226 Flammable liquid and vapor.

H302 Harmful if swallowed.

H319 Causes serious eye irritation.

· Precautionary statements

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Use explosion-proof electrical/ventilating/lighting/equipment.

Wear protective gloves / eye protection / face protection.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Dispose of contents/container in accordance with local/regional/national/international regulations.

- · Classification system:
- · NFPA ratings (scale 0 4)



Health = 1Fire = IReactivity = 0

(Contd. on page 2)

Reviewed on 07/15/2016

(Contd. of page 1)

Product Name: METHYL SALICYLATE

· HMIS-ratings (scale 0 - 4)

- · Other hazards
- · Results of PBT and vPvB assessment
- · PBT: Not applicable,
- · vPvB: Not applicable.

3 Composition/information on ingredients

- · Chemical characterization: Substances
- · CAS No. Description
- 119-36-8 methyl salicylate
- · Identification number(s)
- · EC number: 204-317-7

4 First-aid measures

- · Description of first aid measures
- General information: Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- · After inhalation: Supply fresh air; consult doctor in case of complaints,
- · After skin contact: Generally the product does not irritate the skin.
- · After eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- · After swallowing: Immediately call a doctor.
- · Information for Doctor:
- · Most important symptoms and effects, both acute and delayed No further relevant information available.
- · Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

- · Extinguishing media
- · Suitable extinguishing agents: Use fire fighting measures that suit the environment.
- · Special hazards arising from the substance or mixture No further relevant information available.
- · Advice for firefighters
- · Protective equipment: No special measures required.

6 Accidental release measures

- · Personal precautions, protective equipment and emergency procedures Not required.
- · Environmental precautions: Do not allow to enter sewers/ surface or ground water.
- Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

· Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage

- · Handling:
- · Precautions for safe handling No special precautions are necessary if used correctly.
- Information about protection against explosions and fires: No special measures required.
- · Conditions for safe storage, including any incompatibilities
- · Storage:
- · Requirements to be met by storerooms and receptacles: No special requirements.
- Information about storage in one common storage facility: Not required.
- Further information about storage conditions: Keep receptacle tightly sealed.

(Contd. on page 3)

Printing date 07/15/2016 Reviewed on 07/15/2016

Product Name: METHYL SALICYLATE

· Specific end use(s) No further relevant information available.

(Contd. of page 2)

8 Exposure controls/personal protection

- · Additional information about design of technical systems: No further data; see item 7.
- · Control parameters
- · Components with limit values that require monitoring at the workplace: Not required.
- · Additional information: The lists that were valid during the creation were used as basis,
- Exposure controls
- · Personal protective equipment:
- General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing,

Wash hands before breaks and at the end of work,

Avoid contact with the eyes.

Avoid contact with the eyes and skin,

- · Breathing equipment: Not required.
- · Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eye protection:



Tightly sealed goggles

9 Physical and chemical properties

- · Information on basic physical and chemical properties
- General Information
- · Appearance:

Form: Oily
Color: Colorless
Odor: Aromatic
Odour Threshold: Not applicable.

· pH-value: Not applicable.

Change in condition

Melling point/Melling range: +8 °C (18 °F)
Boiling point/Boiling range: 223 °C (433 °F)

• Flash point: 101 °C (214 °F)
• Flammability (solid, gaseous): Not applicable.

• Ignition temperature: 450 °C (842 °F)

Decomposition temperature: Not applicable.
 Auto igniting: Not determined.

· Danger of explosion: Not determined.

(Contd. on page 4)

Reviewed on 07/15/2016

Product Name: METHYL SALICYLATE

		(Contd. of page 3
Explosion limits:		
Lower:	Not applicable.	
Upper:	Not applicable.	
Vapor pressure at 20 °C (68 °F):	0.13 hPa	
Density at 20 °C (68 °F)	1.18 g/cm3 (9.847 lbs/gal)	
Relative density	Not applicable.	
Vapor density	Not applicable,	
Evaporation rate	Not applicable.	
Solubility in / Miscibility with		
Water at 30 °C (86 °F):	0.7 g/l	
Partition coefficient (n-octanol/wate	r): Not applicable.	
Viscosity:		
Dynamic:	Not applicable,	
Kinematic:	Not applicable.	
Organic solvents:	0.0 %	
Other information	No further relevant information available.	

10 Stability and reactivity

- · Reactivity No further relevant information available.
- · Chemical stability
- · Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · Possibility of hazardous reactions No dangerous reactions known.
- · Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.
- · Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:
- · LD/LC50 values that are relevant for classification:

119-36-8 methyl salicylate

Oral LD50 887 mg/kg (rat)

- Primary irritant effect:
- on the skin: No irritant effect.
- on the eye: Irritating effect.
- · Sensitization: No sensitizing effects known.
- · Additional toxicological information:
- · Carcinogenic categories
- · IARC (International Agency for Research on Cancer)

Substance is not listed.

· NTP (National Toxicology Program)

Substance is not listed.

· OSHA-Ca (Occupational Safety & Health Administration)

Substance is not listed.

12 Ecological information

- · Toxicity
- · Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- · Additional ecological information:
- · General notes:

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

(Contd. on page 5)

Reviewed on 07/15/2016

Product Name: METHYL SALICYLATE

· Results of PBT and vPvB assessment

(Contd. of page 4)

(Contd. on page 6)

- · PBT: Not applicable.
- · vPvB: Not applicable.
- · Other adverse effects No further relevant information available.

13 Disposal considerations

- · Waste treatment methods
- · Recommendation: Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- · Uncleaned packagings:
 · Recommendation: Disposal must be made according to official regulations.

Transport information	
UN-Number DOT, ADR, IMDG, IATA	UN1992
UN proper shipping name DOT ADR IMDG	Flammable liquids, toxic, n.o.s. (METHYL SALICYLATE) 1992 Flammable liquids, toxic, n.o.s. (METHYL SALICYLATE) FLAMMABLE LIQUID, TOXIC, N.O.S. (METHYL SALICYLATE), MARIN POLLUTANT
IATA	FLAMMABLE LIQUID, TOXIC, N.O.S. (METHYL SALICYLATE)
Transport hazard class(es) DOT	
Toxe (Exp	3 Flammable liquids
Class Label	3. 6.1
ADR	TO SECURE OF THE
Class Label	3 Flammable liquids 3+6.1
IMDG	370.7
Class Label	3 Flanmable liquids 3/6.1
IATA	
Class Label	3 Flammable liquids 3 (6.1)
Packing group DOT, ADR, IMDG, IATA	III
Environmental hazards: Marine pollutant:	Yes (DOT) Symbol (fish and tree)

Product Name: METHYL SALICYLATE

	(Contd. of page
Special precautions for user Danger code (Kemler):	Warning: Flammable liquids
EMS Number:	F-E,S-D
Transport in bulk according to Annex II of MARF	OL73/78 and the IBC
Code	Not applicable.
Transport/Additional information:	
DOT	
Remarks:	Special marking with the symbol (fish and tree).
ADR	
Excepted quantities (EQ)	Code: E1
	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 1000 ml
IMDG	
Limited quantities (LQ)	5L
Excepted quantities (EQ)	Code: El
	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 1000 ml
UN "Model Regulation":	UN 1992 FLAMMABLE LIQUIDS, TOXIC, N.O.S. (METHYL SALICYLAT) 3 (6.1). III

15 Regulatory information

- · Safety, health and environmental regulations/legislation specific for the substance or mixture
- · Sara
- · Section 355 (extremely hazardous substances):

Substance is not listed.

· Section 313 (Specific toxic chemical listings):

Substance is not listed.

· TSCA (Toxic Substances Control Act):

Substance is listed.

- · Proposition 65
- · Chemicals known to cause cancer:

Substance is not listed.

Chemicals known to cause reproductive toxicity for females:

Substance is not listed.

Chemicals known to cause reproductive toxicity for males:

Substance is not listed.

Chemicals known to cause developmental toxicity:

Substance is not listed.

- · Carcinogenic categories
- · EPA (Environmental Protection Agency)

Substance is not listed.

TLV (Threshold Limit Value established by ACGIH)

Substance is not listed.

· NIOSH-Ca (National Institute for Occupational Safety and Health)

Substance is not listed.

- GHS label elements The substance is classified and labeled according to the Globally Harmonized System (GHS).
- · Hazard pictograms





GHS02

GHS07

- · Signal word Warning
- Hazard-determining components of labeling: methyl salicylate

(Contd. of page 6)

Reviewed on 07/15/2016 Printing date 07/15/2016

Product Name: METHYL SALICYLATE

· Hazard statements

H226 Flammable liquid and vapor.

H302 Harmful if swallowed.

H319 Causes serious eye irritation,

· Precautionary statements

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Use explosion-proof electrical/ventilating/lighting/equipment.

Wear protective gloves / eye protection / face protection.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

If in eyes: Rinse cautiously with water for several minutes, Remove contact lenses, if present and easy to do. Continue rinsing,

Dispose of contents/container in accordance with local/regional/national/international regulations.

Chemical safety assessment: A Chemical Sufety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Department issuing SDS: product safety department

· Contact:

SPEX CertiPrep, LLC.

1-732-549-7144

· Date of preparation / last revision 07/15/2016 / -

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) IMDG: International Maritime Code for Dangerous Goods

DISO. International national Code for Congression Strongs
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventors of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT. Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative NIOSH: National Institute for Occupational Sofety OSH: Occupational Sofety & Health TLV, Threshold Limit Value

PEL: Permissible Exposure Limit

REL. Recommended Exposure Limit Flam. Liq. 3: Flammable liquids = Category 3 Acute Tox. 4: Acute toxicity = Category 4 Eye Irrit, 2A: Serious eye damage/eye irritation = Category 2A

1 Identification

- · Product identifier
- · Product Name: TOLUENE
- · Part Number: NEAT-3505
- · CAS Number:
- 108-88-3
- EC number:
- 203-625-9
- Index number: 601-021-00-3
- · Application of the substance / the mixture Certified Reference Material
- · Details of the supplier of the safety data sheet
- · Manufacturer/Supplier:
- SPEX CertiPrep, LLC.
- 203 Norcross Ave, Metuchen,
- NJ 08840 USA
- · Information department: product safety department
- · Emergency telephone number:

Emergency Phone Number (24 hours)

CHEMTREC (800-424-9300)

Outside US: 703-527-3887

$\ 2\ Hazard(s)\ identification$

· Classification of the substance or mixture



GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.



GHS08 Health hazard

Repr. 2 H361 Suspected of damaging fertility or the unborn child.

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

STOT SE 3 H336 May cause drowsiness or dizziness.

- · Label elements
- · GHS label elements The substance is classified and labeled according to the Globally Harmonized System (GHS).
- · Hazard pictograms







GHS02

2 GHS07

· Signal word Danger

- · Hazard-determining components of labeling:
- toluene
- · Hazard statements
- H225 Highly flammable liquid and vapor.
- H315 Causes skin irritation.
- H361 Suspected of damaging fertility or the unborn child.
- 11336 May cause drowsiness or dizziness.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H304 May be fatal if swallowed and enters airways.
- · Precautionary statements

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

(Contd. on page 2)

Reviewed on 03/07/2016

(Contd. of page 1)

Product Name: TOLUENE

Use explosion-proof electrical/ventilating/lighting/equipment.

IF SWALLOWED: Immediately call a POISON CENTER/doctor.

If on skin (or hair): Take off immediately all contaminated clothing, Rinse skin with water/shower.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

- · Classification system:
- · NFPA ratings (scale 0 4)



Health = 2 Fire = 3 Reactivity = 0

· HMIS-ratings (scale 0 - 4)



Health = *2 *Fire* = 3 *Reactivity* = 0

- · Other hazards
- · Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · vPvB: Not applicable.

3 Composition/information on ingredients

- · Chemical characterization: Substances
- · CAS No. Description 108-88-3 toluene
- · Identification number(s)
- EC number: 203-625-9 • Index number: 601-021-00-3

4 First-aid measures

- · Description of first aid measures
- · General information: Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- · After inhalation: In case of unconsciousness place patient stably in side position for transportation.
- · After skin contact: Immediately wash with water and soap and rinse thoroughly.
- · After eye contact: Rinse opened eye for several minutes under running water.
- · After swallowing: If symptoms persist consult doctor.
- · Information for Doctor:
- Most important symptoms and effects, both acute and delayed No further relevant information available.
- · Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

- · Extinguishing media
- · Suitable extinguishing agents: CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- · For safety reasons unsuitable extinguishing agents: Water with full jet
- · Special hazards arising from the substance or mixture No further relevant information available.
- · Advice for firefighters
- · Protective equipment: No special measures required.

6 Accidental release measures

- · Personal precautions, protective equipment and emergency procedures Wear protective equipment. Keep unprotected persons away.
- · Environmental precautions: Do not allow to enter sewers/ surface or ground water.
- · Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

- · Reference to other sections
- See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

(Contd. on page 3)

Reviewed on 03/07/2016

Product Name: TOLUENE

See Section 13 for disposal information.

(Contd. of page 2)

7 Handling and storage

- · Handling:
- · Precautions for safe handling No special precautions are necessary if used correctly.
- Information about protection against explosions and fires:
- Keep ignition sources away Do not smoke.

Protect against electrostatic charges.

- · Conditions for safe storage, including any incompatibilities
- · Storage:
- · Requirements to be met by storerooms and receptacles: Store in a cool location.
- Information about storage in one common storage facility: Not required.
- · Further information about storage conditions:
- Keep receptacle tightly sealed.
- Store in cool, dry conditions in well sealed receptacles.
- · Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- · Additional information about design of technical systems: No further data; see item 7,
- · Control parameters
- · Components with limit values that require monitoring at the workplace:

108-88-3 toluene

PEL Long-term value: 200 ppm

Ceiling limit value: 300; 500* ppm

*10-min peak per 8-hr shift

REL Short-term value: 560 mg/m 150 ppm

Long-term value: 375 mg/m³, 100 ppm

TLV Long-term value: 75 mg/m3, 20 ppm

BEI

Ingredients with biological limit values:

108-88-3 toluene

BEI 0.02 mg/L

Medium: blood

Time: prior to last shift of workweek

Parameter: Toluene

0.03 nig/L

Medium: urine

Time: end of shift

Parameter: Toluene

0.3 mg/g creatinine

Medium: urine

Time: end of shift

Parameter: o-Cresol with hydrolysis (background)

- Additional information: The lists that were valid during the creation were used as basis.
- Exposure controls
- Personal protective equipment:
- General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Avoid contact with the skin.

Avoid contact with the eyes and skin.

Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

(Contd. on page 4)

Printing date 07/15/2016 Reviewed on 03/07/2016

Product Name: TOLUENE

(Contd. of page 3)

· Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eye protection:



Tightly sealed goggles

9 Physical and chemical propertie	8
· Information on basic physical and o	themical properties
General Information	
· Appearance:	
Form:	Liquid
Color:	Colorless
· Odor:	Aromatic
· Odour Threshold:	Not applicable.
· pH-value:	Not applicable,
· Change in condition	
Melting point/Melting range:	-95 °C (-139 °F)
Boiling point/Boiling range:	110-111 °C (230-232 °F)
· Flash point:	4 °C (39 °F)
Flammability (solid, gaseous):	Not applicable,
· Ignition temperature:	535 °C (995 °F)
Decomposition temperature:	Not applicable.
· Auto igniting:	Not determined.
Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· Explosion limits:	
Lower:	1.2 Vol %
Upper:	7 Vol %
· Vapor pressure at 20 °C (68 °F):	29 hPa (22 mm Hg)
Density at 20 °C (68 °F)	0.87 g/cm3 (7.26 lbs/gal)
· Relative density	Not applicable,
· Vapor density	Not applicable.
· Evaporation rate	Not applicable.
· Solubility in / Miscibility with	
Water at 15 °C (59 °F):	0.5 g/l
- Partition coefficient (n-octanol/wat	er): Not applicable.
· Viscosity:	
Dynamic at 20 °C (68 °F):	0.6 mPas
Kinematic:	Not applicable.
Organic solvents:	100.0 %
VOC content:	100.0 %

(Contd. on page 5)

Reviewed on 03/07/2016

Product Name: TOLUENE

Other information

No further relevant information available.

(Contd. of page 4)

10 Stability and reactivity

- · Reactivity No further relevant information available.
- · Chemical stability
- · Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · Possibility of hazardous reactions No dangerous reactions known.
- · Conditions to avoid No further relevant information available.
- Incompatible materials: No further relevant information available.
- · Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:

LD/LC50 values that are relevant for classification;

108-88-3	toluene
----------	---------

Oral	LD50	5000 mg/kg (rat)
Dermal	LD50	12124 mg/kg (rabbit)
Inhalative	LC50/4 h	5320 mg/l (mouse)

- · Primary irritant effect:
- on the skin: Irritant to skin and mucous membranes.
- · on the eye: No irritating effect.
- · Sensitization: No sensitizing effects known.
- · Additional toxicological information:
- · Carcinogenic categories

· IARC (International Agency for Research on Cancer)

108-88-3 toluene

· NTP (National Toxicology Program)

Substance is not listed.

· OSHA-Ca (Occupational Safety & Health Administration)

Substance is not listed.

12 Ecological information

- · Toxicity
- · Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- · Additional ecological information:
- · General notes:

Water hazard class 2 (Assessment by list): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

- · Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · vPvB: Not applicable.
- Other adverse effects No further relevant information available.

13 Disposal considerations

- · Waste treatment methods
- · Recommendation: Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

(Contd. on page 6)

3

Reviewed on 03/07/2016

Product Name: TOLUENE

(Contd. of page 5)

- · Uncleaned packagings:
 · Recommendation: Disposal must be made according to official regulations.

Transport information	1100 0000
UN-Number DOT, ADR, IMDG, IATA	UN1294
UN proper shipping name DOT, IATA ADR IMDG	Toluene 1294 Toluene TOLUENE
Transport hazard class(es) DOT	
Class Label	3 Flummable liquids 3
ADR, IMDG, IATA	
Class Label	3 Flanmable liquids 3
Packing group DOT, ADR, IMDG, IATA	II .
Environmental hazards:	Not applicable,
Special precautions for user Danger code (Kemler): EMS Number: Stowage Category	Warning: Flammable liquids 33 F-E,S-D B
Transport in bulk according to Annex II of MARPO Code	OL73/78 and the IBC Not applicable.
Transport/Additional information:	
ADR Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
IMDG Limited quantities (LQ) Excepted quantities (EQ)	1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
UN "Model Regulation":	UN 1294 TOLUENE, 3, II

15 Regulatory information

- · Safety, health and environmental regulations/legislation specific for the substance or mixture · Sara
- · Section 355 (extremely hazardous substances):

Substance is not listed.

· Section 313 (Specific toxic chemical listings):

Substance is listed.

(Contd. on page 7)

Reviewed on 03/07/2016

Product Name: TOLUENE

(Contd. of page 6) · TSCA (Toxic Substances Control Act): Substance is listed. Proposition 65 Chemicals known to cause cancer: Substance is not listed. · Chemicals known to cause reproductive toxicity for females: Substance is listed. · Chemicals known to cause reproductive toxicity for males: Substance is not listed. Chemicals known to cause developmental toxicity: Substance is listed. · Carcinogenic categories EPA (Environmental Protection Agency) 108-88-3 toluene 11 · TLV (Threshold Limit Value established by ACGIH) 108-88-3 toluene A4· NIOSH-Ca (National Institute for Occupational Safety and Health) GHS label elements The substance is classified and labeled according to the Globally Harmonized System (GHS).









- Signal word Danger
- · Hazard-determining components of labeling:

toluene

- · Hazard statements
- H225 Highly flammable liquid and vapor.
- H315 Causes skin irritation.
- H361 Suspected of damaging fertility or the unborn child.
- H336 May cause drowsiness or dizziness.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H304 May be fatal if swallowed and enters airways.
- Precautionary statements
- Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Use explosion-proof electrical/ventilating/lighting/equipment.

IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower,

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- · Department issuing SDS: product safety department
- · Contact:

SPEX CertiPrep, LLC.

1-732-549-7144

- · Date of preparation / last revision 07/15/2016 / -
- · Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists EINECS: European Inventors of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA) VOC: Volatile Organic Compounds (USA, EU)

(Contd. of page 7)

Safety Data Sheet acc. to OSHA HCS

Printing date 07/15/2016 Reviewed on 03/07/2016

Product Name: TOLUENE

LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Sufery
OSHA. Occupational Sufery & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL. Recommended Exposure Limit
BEI Biological Exposure Limit
BEI Biological Exposure Limit
BEI Biological Exposure Limit
Flum, Etg. 2: Flammable liquids = Category 2
Skin Irrit. 2: Skin corrosion/irritation = Category 2
Skin Irrit. 2: Skin corrosion/irritation = Category 2
STOT SE 3: Specific target organ toxicity (single exposure) = Category 2
Asp. Tox. 1: Aspiration hazard = Category 1

1 Identification

- · Product identifier
- · Product Name: CHLOROFORM
- · Part Number: NEAT-865
- · CAS Number: 67-66-3
- · EC number:
- 200-663-8
- · Index number:
- 602-006-00-4
- · Application of the substance / the mixture Certified Reference Material
- · Details of the supplier of the safety data sheet
- · Manufacturer/Supplier:
- SPEX CertiPrep, LLC.
- 203 Norcross Ave, Metuchen,
- NJ 08840 USA
- · Information department: product safety department
- · Emergency telephone number:
- Emergency Phone Number (24 hours)
- CHEMTREC (800-424-9300)
- Outside US: 703-527-3887

2 Hazard(s) identification

Classification of the substance or mixture



GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.



GHS06 Skull and crossbones

Acute Tox. 3 H331 Toxic if inhaled.



GHS08 Health hazard

Carc. 2

H351 Suspected of causing cancer.

Repr. 2

H361 Suspected of damaging fertility or the unborn child.

STOT RE 1 H372 Causes damage to organs through prolonged or repeated exposure.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye irritation.

- GHS label elements The substance is classified and labeled according to the Globally Harmonized System (GHS).
- Hazard pictograms









GHS02

GHS06

Signal word Danger

- Hazard-determining components of labeling: chloroform
- Hazard statements

H225 Highly flammable liquid and vapor.

(Contd. on page 2)

Reviewed on 07/15/2016

(Contd. of page 1)

Product Name: CHLOROFORM

H302 Harmful if swallowed.

H331 Toxic if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H351 Suspected of causing cancer.

H361 Suspected of damaging fertility or the unborn child.

H372 Causes damage to organs through prolonged or repeated exposure.

· Precautionary statements

Keep away from heat/sparks/open flames/hot surfaces. No smoking

Use explosion-proof electrical/ventilating/lighting/equipment.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

- · Classification system:
- NFPA ratings (scale 0 4)



Health = 3 Fire = 3 Reactivity = 0

· HMIS-ratings (scale 0 - 4)



Health = *3 Fire = 3 Reactivity = 0

EACTIVITY 0 REGERENCE

- Other hazards
- · Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · vPvB: Not applicable.

3 Composition/information on ingredients

- · Chemical characterization: Substances
- · CAS No. Description
- 67-66-3 chloroform
- · Identification number(s)
- ·EC number: 200-663-8
- · Index number: 602-006-00-4

4 First-aid measures

- · Description of first aid measures
- General information: Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- · After inhalation:

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

In case of unconsciousness place patient stably in side position for transportation.

- · After skin contact: Immediately wash with water and soap and rinse thoroughly.
- After eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- · After swallowing: Immediately call a doctor.
- · Information for Doctor:
- · Most important symptoms and effects, both acute and delayed No further relevant information available.
- · Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

- · Extinguishing media
- Suitable extinguishing agents: CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- · Special hazards arising from the substance or mixture No further relevant information available.
- · Advice for firefighters
- · Protective equipment: Mouth respiratory protective device.

- US

Reviewed on 07/15/2016

Product Name: CHLOROFORM

(Contd. of page 2)

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures Not required.
- Environmental precautions: Do not allow to enter sewers/ surface or ground water.

- Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust),

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

· Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage

- · Handling:
- · Precautions for safe handling Ensure good ventilation/exhaustion at the workplace.
- Information about protection against explosions and fires: No special measures required.
- · Conditions for safe storage, including any incompatibilities
- · Storage:
- · Requirements to be met by storerooms and receptacles: No special requirements.
- · Information about storage in one common storage facility: Not required.
- · Further information about storage conditions: Keep receptacle tightly sealed.
- · Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- · Additional information about design of technical systems: No further data; see item 7.
- Control parameters

Components with limit values that require monitoring at the workplace:

67-66-3 chloroform

PEL Ceiling limit value: 240 mg/m3, 50 ppm

REL Short-term value: 9.78* mg/m3, 2* ppm

*60-min; See Pocket Guide App. A

TLV Long-term value: 49 mg/m3, 10 ppm

- · Additional information: The lists that were valid during the creation were used as basis.
- · Exposure controls
- · Personal protective equipment:
- · General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

· Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

(Contd. on page 4)

Reviewed on 07/15/2016

(Contd. of page 3)

Product Name: CHLOROFORM

· Eye protection: Safety glasses



Tightly sealed goggles

Physical and chemical propertie	X .
Information on basic physical and c	hemical properties
General Information	
Appearance:	
Form:	Liquid
Color:	Colorless
Odor:	Pleasant
Odour Threshold:	Not applicable.
pII-value:	Not applicable.
Change in condition	
Melting point/Melting range:	-63 °C (-81 °F)
Boiling point/Boiling range:	62 °C (144 °F)
Flash point:	0 °C (32 °F)
Flammability (solid, gaseous):	Not applicable.
Ignition temperature:	982 °C (1800 °F)
Decomposition temperature:	Not applicable.
Auto igniting:	Not determined.
Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
Explosion limits:	
Lower:	Not applicable.
Upper:	Not applicable,
Vapor pressure at 20 °C (68 °F):	210 hPa (158 mm Hg)
Density at 20 °C (68 °F)	1.47988 g/cm² (12.35 lbs/gal)
Relative density	Not applicable.
Vapor density	Not applicable.
Evaporation rate	Not applicable.
Solubility in / Miscibility with	
Water at 20 °C (68 °F):	8 g/l
Partition coefficient (n-octanol/wate	er); Not applicable.
Viscosity:	
Dynamic at 20 °C (68 °F):	0.56 mPas
Kinematic:	Not applicable.
Organic solvents:	0.0 %
material trade and set	At a control of the contract of the control of the

10 Stability and reactivity

· Other information

- · Reactivity No further relevant information available.
- · Chemical stability
- · Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

No further relevant information available.

- · Possibility of hazardous reactions No dangerous reactions known.
- · Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.
- · Hazardous decomposition products: No dangerous decomposition products known

(Contd. on page 5)

Reviewed on 07/15/2016

Product Name: CHLOROFORM

(Contd. of page 4)

11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:

· LD/LC50 values that are relevant for classification:

67-66-3 chloroform

Oral | LD50 | 908 mg/kg (rat)

Dermal LD50 75 mg/kg (rat)

- · Primary irritant effect:
- on the skin: Irritant to skin and mucous membranes.
- · on the eye; Irritating effect.
- · Sensitization: No sensitizing effects known.
- · Additional toxicological information:
- · Carcinogenic categories

· IARC (International Agency for Research on Cancer)

67-66-3 chloroform

120

· NTP (National Toxicology Program)

67-66-3 chloroform

2B

R

· OSHA-Ca (Occupational Safety & Health Administration)

Substance is not listed.

12 Ecological information

- Toxicity
- · Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- · Additional ecological information:
- General notes:

Water hazard class 3 (Assessment by list): extremely hazardous for water

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into the ground.

- Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · vPvB: Not applicable.
- Other adverse effects No further relevant information available.

13 Disposal considerations

- · Waste treatment methods
- · Recommendation: Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- · Uncleaned packagings:
- · Recommendation: Disposal must be made according to official regulations.

14 Transport information

- · UN-Number
- · DOT, ADR, IMDG, IATA

UN1888

· UN proper shipping name

- · DOT
- · ADR
- · IMDG, IATA

Chloroform 1888 Chloroform

CHLOROFORM

(Contd. on page 6)

Printing date 07/15/2016 Reviewed on 07/15/2016

Product Name: CHLOROFORM

(Contd. of page 5) · Transport hazard class(es) · DOT 6.1 Toxic substances · Class · Label · ADR, IMDG, IATA 6.1 Toxic substances Class Label 6.1 · Packing group · DOT, ĂĎR, IMDG, IATA Ш Environmental hazards: Not applicable. Warning: Toxic substances Special precautions for user 60 Danger code (Kemler): F-A,S-A EMS Number: Liquid halogenated hydrocarbons · Segregation groups Stowage Category SW2 Clear of living quarters. Stowage Code · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Not applicable. Code Transport/Additional information: · ADR Code: E1 · Excepted quantities (EQ) Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml · IMDG 5L· Limited quantities (LQ) · Excepted quantities (EQ) Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml UN 1888 CHLOROFORM, 6.1, 111 · UN "Model Regulation":

15 Regulatory information

- · Safety, health and environmental regulations/legislation specific for the substance or mixture
- · Sara
- · Section 355 (extremely hazardous substances):

Substance is listed.

· Section 313 (Specific toxic chemical listings):

Substance is listed.

· TSCA (Toxic Substances Control Act):

Substance is listed.

- · Proposition 65
- · Chemicals known to cause cancer:

Substance is listed.

· Chemicals known to cause reproductive toxicity for females:

Substance is not listed.

· Chemicals known to cause reproductive toxicity for males:

Substance is not listed.

(Contd. on page 7)

Reviewed on 07/15/2016

Product Name: CHLOROFORM

(Contd. of page 6) · Chemicals known to cause developmental toxicity: Substance is listed. · Carcinogenic categories · EPA (Environmental Protection Agency) 67-66-3 chloroform B2, L, NL · TLV (Threshold Limit Value established by ACGIH) 67-66-3 chloroform A3NIOSH-Ca (National Institute for Occupational Safety and Health)

Substance is listed.

GHS label elements The substance is classified and labeled according to the Globally Harmonized System (GHS).

· Hazard pictograms









· Signal word Danger

· Hazard-determining components of labeling:

chloroform

· Hazard statements

H225 Highly flammable liquid and vapor,

H302 Harmful if swallowed.

H331 Toxic if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H351 Suspected of causing cancer.

H361 Suspected of damaging fertility or the unborn child.

H372 Causes damage to organs through prolonged or repeated exposure.

· Precautionary statements

Keep away from heat/sparks/open flames/hot surfaces, No smoking.

Use explosion-proof electrical/ventilating/lighting/equipment.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do, Continue rinsing. Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- · Department issuing SDS: product safety department
- · Contact:

SPEX CertiPrep, LLC.

1-732-549-7144

- · Date of preparation / last revision 07/15/2016 / -
- · Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangeteuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Roud) IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists EINECS: European Inventory of Existing Commercial Chemical Substances

CAS. Chemical Abstracts Service (division of the American Chemical Society) NFPA: National Fire Protection Association (USA)

HMIS: Hozardous Materials Identification System (USA) LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent. Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH, National Institute for Occupational Sofety OSHA: Occupational Safety & Health TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit Flam. Liq. 2: Flammable liquids - Category 2 Acute Tox. 4: Acute toxicity - Category 4 Acute Tox. 3: Acute toxicity - Category 3 Skin Irrit. 2: Skin corrosion/irritation - Category 2

(Contd. on page 8)

Safety Data Sheet acc. to OSHA HCS

Printing date 07/15/2016

Reviewed on 07/15/2016

Product Name: CHLOROFORM

Eve Irrit. 2A: Serious eve damageleve irritation = Category 2A
Carc. 2: Carcinogenicity = Category 2
Repr. 2: Reproductive toxicity = Category 2
STOT RE 1: Specific target organ toxicity (repeated exposure) = Category 1

(Contd. of page 7)

Reviewed on 07/15/2016

1 Identification

- · Product identifier
- · Product Name: Purgeable Aromatics for Gasoline Identification
- · Part Number: P-GAS
- · Application of the substance / the mixture Certified Reference Material
- · Details of the supplier of the safety data sheet
- · Manufacturer/Supplier: SPEX CertiPrep, LLC.

203 Norcross Ave, Metuchen,

NJ 08840 USA

- · Information department: product safety department
- · Emergency telephone number:

Emergency Phone Number (24 hours)

CHEMTREC (800-424-9300)

Outside US: 703-527-3887

2 Hazard(s) identification

Classification of the substance or mixture



GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.



GHS06 Skull and crossbones

Acute Tox. 3 H331 Toxic if inhaled.



GHS08 Health hazard

Muta. 1B H340 May cause genetic defects.

Carc. 1A H350 May cause cancer.

Repr. 2 H361 Suspected of damaging fertility or the unborn child.

STOT SE 1 H370 Causes damage to organs.

- · Label elements
- GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
- · Hazard pictograms







GHS02

GHS06

GHS08

- · Signal word Danger
- · Hazard-determining components of labeling:

methanol

benzene

Hazard statements

H225 Highly flammable liquid and vapor.

H331 Toxic if inhaled.

H340 May cause genetic defects.

H350 May cause cancer.

H361 Suspected of damaging fertility or the unborn child.

H370 Causes damage to organs.

· Precautionary statements

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Use explosion-proof electrical/ventilating/lighting/equipment,

Do not breathe dust/fume/gas/mist/vapors/spray.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 2)

Reviewed on 07/15/2016

(Contd. of page 1)

Product Name: Purgeable Aromatics for Gasoline Identification

- · Classification system:
- · NFPA ratings (scale 0 4)



Health = 3 Fire = 3 Reactivity = 0

· HMIS-ratings (scale 0 - 4)



Health = *3 Fire = 3 Reactivity = 0

· Other hazards

- · Results of PBT and vPvB assessment
- · PBT: Not applicable.
- vPvB: Not applicable.

3 Composition/information on ingredients

· Description: Mixture of the substances listed below with nonhazardous additions

Dangerous components:	
67-56-1 methanol	97.8%
106-46-7 I,4-dichlorobenzene	0.2%
71-43-2 benzene	0.2%
108-88-3 toluene	0.2%
100-41-4 ethylbenzene	0.2%
Chemical identification of the substance/preparation	
108-38-3 m-xylene	0.2%
95-50-1 1,2-dichlorobenzene	0.2%
541-73-1 1,3-dichlorobenzene	0.2%
95-47-6 o-xylene	0.2%
108-90-7 chlorobenzene	0.2%
106-42-3 p-xylene	0.2%
1634-04-4 Methyl-tert-butyl ether	0.2%

4 First-aid measures

- · Description of first aid measures
- · General information:

Immediately remove any clothing soiled by the product.

Remove breathing apparatus only after contaminated clothing have been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration.

· After inhalation:

Supply fresh air or oxygen; call for doctor.

In case of unconsciousness place patient stably in side position for transportation.

- · After skin contact: Immediately wash with water and soap and rinse thoroughly.
- After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor,
- · After swallowing: Do not induce vomiting; immediately call for medical help.
- · Information for Doctor:
- · Most important symptoms and effects, both acute and delayed No further relevant information available.
- Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

- · Extinguishing media
- · Suitable extinguishing agents: CO2, sund, extinguishing powder. Do not use water.
- For safety reasons unsuitable extinguishing agents: Water with full jet
- · Special hazards arising from the substance or mixture No further relevant information available.

(Contd. on page 3)

Reviewed on 07/15/2016

Product Name: Purgeable Aromatics for Gasoline Identification

· Advice for firefighters

· Protective equipment: Mouth respiratory protective device.

(Contd. of page 2)

6 Accidental release measures

- · Personal precautions, protective equipment and emergency procedures Wear protective equipment. Keep unprotected persons away.
- · Environmental precautions:

Do not allow product to reach sewage system or any water course.

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers/ surface or ground water.

· Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents

· Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage

- · Handling:
- · Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Prevent formation of aerosols.

· Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Keep respiratory protective device available.

- · Conditions for safe storage, including any incompatibilities
- · Storage:
- · Requirements to be met by storerooms and receptacles: Store in a cool location.
- Information about storage in one common storage facility: Not required.
- · Further information about storage conditions:

Keep receptacle tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

· Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- · Additional information about design of technical systems: No further data; see item 7.
- · Control parameters

Components with limit values that require monitoring at the workplace:

67-56-1 methanol

- PEL Long-term value: 260 mg/m3, 200 ppm
- REL Short-term value: 325 mg/m³, 250 ppm

Long-term value: 260 mg/m3, 200 ppm

Skin

TLV Short-term value: 328 mg/m³, 250 ppm Long-term value: 262 mg/m³, 200 ppm

Skin; BEI

106-46-7 1,4-dichlorobenzene

- PEL Long-term value: 450 mg/m2, 75 ppm
- REL See Pocket Guide App. A
- TLV Long-term value: 60 mg/m3, 10 ppm

(Contd. on page 4)

Product Name: Purgeable Aromatics for Gasoline Identification

71-4	(Contd. of page 13-2 benzene
PEL.	Short-term value: 15* mg/m³, 5* ppm
	Long-term value: 3* mg/m³, 1* ppm
	*table Z-2 for exclusions in 29CFR1910.1028(d)
REL	Short-term value: 1 ppm
	Long-term value: 0.1 ppm
	See Pocket Guide App. A
TLV	Short-term value: 8 mg/m³, 2.5 ppm
	Long-term value: 1.6 mg/m³, 0.5 ppm Skin: BEI
100	88-3 toluene
PEL	Long-term value: 200 ppm Ceiling limit value: 300; 500* ppm
	*10-min peak per 8-hr shift
RFI	Short-term value: 560 mg/m³, 150 ppm
	Long-term value: 375 mg/m², 100 ppm
TIV	Long-term value: 75 mg/m³, 20 ppm
	BEI
100-	41-4 ethylbenzene
	Long-term value: 435 mg/m³, 100 ppm
	Short-term value: 545 mg/m³, 125 ppm
NLL	Long-term value: 435 mg/m², 100 ppm
τιν	Long-term value: 87 mg/m², 20 ppm
	BEI
7	edients with biological limit values:
	6-1 methanol
	15 mg/L Medium: urine
	Time: end of shift
	Parameter: Methanol (background, nonspecific)
	3-2 benzene
	25 µg/g creatinine
	Medium: urine
	Time: end of shift Parameter
	Parameter: S-Phenylmercapturic acid (background
	500 µg/g creatinine
	Medium: urine Time: end of shift
	Parameter: t.t-Muconic acid (background)
	88-3 toluene
	0.02 mg/L
	Medium: blood
	Time: prior to last shift of workweek
	Parameter: Toluene
	0.03 mg/L
	Medium: urine
ŀ	Time: end of shift Parameter: Toluene
	rarameter, tottene
	0.3 mg/g creatinine
	Medium: urine
	Time: end of shift
	Parameter: o-Cresol with hydrolysis (background)
	41-4 ethylbenzene

(Contd. of page 4)

Product Name: Purgeable Aromatics for Gasoline Identification

BEI 0.7 g/g creatinine

Medium: urine

Time: end of shift at end of workweek

Parameter: Sum of mandelic acid and phenylglyoxylic acid (nonspecific, semi-quantitative)

Medium: end-exhaled air

Time: not critical

Parameter: Ethyl benzene (semi-quantitative)

- · Additional information: The lists that were valid during the creation were used as basis.
- · Exposure controls
- · Personal protective equipment:
- General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work.

Store protective clothing separately,

Avoid contact with the eyes and skin.

Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture,

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eye protection:



Tightly sealed goggles

	or assicut una enemicia properties		
_			
	- Information on	basic physical a	ind chemical properties

General Information	
Appearance:	
**	

Form:

Odor:

According to product specification

Odour Threshold:

Characteristic Not applicable.

pH-value:

Not applicable.

Change in condition

Melting point/Melting range:

Undetermined.

Boiling point/Boiling range:

64 °C (147 °F)

Flash point:

11 °C (52 °F)

Flammability (solid, gaseous):

Not applicable

Ignition temperature:

455 °C (851 °F)

Decomposition temperature:

Not applicable.

Auto igniting:

Product is not selfigniting.

Danger of explosion:

Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

(Contd. on page 6)

Printing date 07/15/2016 Reviewed on 07/15/2016

Product Name: Purgeable Aromatics for Gasoline Identification

		(Contd. of page
Explosion limits: Lower: Upper:	5.5 Vol % 44.0 Vol %	
Vapor pressure at 20 °C (68 °F);	128 hPa (96 mm Hg)	
Density at 20°C (68°F) Relative density Vapor density Evaporation rate	0.79489 g/cm³ (6.633 lbs/gal) Not applicable. Not applicable. Not applicable.	
Solubility in / Miscibility with Water:	Not miscible or difficult to mix.	
Partition coefficient (n-octanol/wate	r): Not applicable.	
Viscosity: Dynamic: Kinematic:	Not applicable. Not applicable.	
Solvent content; Organic solvents; VOC content:	99.4 % 99.4 %	
Solids content: Other information	0.2 % No further relevant information available,	

10 Stability and reactivity

- · Reactivity No further relevant information available.
- · Chemical stability
- · Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · Possibility of hazardous reactions No dangerous reactions known.
- · Conditions to avoid No further relevant information available,
- · Incompatible materials: No further relevant information available.
- · Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:

LD/LC50	values that	are relevant for classification:
67-56-1 m	ethanol	
Oral	LD50	5628 mg/kg (rai)
Dermal	LD50	15800 mg/kg (rabbit)
95-50-1 1,2	2-dichloro	benzene
Oral	LD50	500 mg/kg (rat)
106-46-7 1	,4-dichlor	obenzene
Oral LD50 500 mg/kg (rat)		500 mg/kg (rat)
71-43-2 be	nzene	
Oral	LD50	4894 mg/kg (rat)
Dermal	LD50	48 mg/kg (mouse)
Inhalative	LC50/4 h	9980 mg/l (mouse)
Daring some for	11 11 11	A CONTRACTOR OF THE CONTRACTOR

- · Primary irritant effect:
- · on the skin: No irritant effect.
- · on the eye: No irritating effect.
- · Sensitization: No sensitizing effects known.
- · Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations:

Toxic

Carcinogenic.

The product can cause inheritable damage.

· Carcinogenic categories

· IARC (International Agency for Research on Cancer)

108-38-3 m-xylene

(Contd. on page 7)

Product Name: Purgeable Aromatics for Gasoline Identification

		(Contd. of page
	1,2-dichlorobenzene	3
541-73-1	1,3-dichlorobenzene	3
106-46-7	1,4-dichlorobenzene	28
71-43-2	benzene	
95-47-6	o-xylene	3
106-42-3	p-xylene	3
108-88-3	toluene	3
100-41-4	ethylbenzene	25
1634-04-4	Methyl-tert-butyl ether	3
· NTP (Natio	nal Toxicology Program)	
106-46-7	,4-dichlorobenzene	I R
71-43-2 1	enzene	
· OSHA-Ca	Occupational Safety & Health Administration)	
71-43-2 be		

12 Ecological information

- · Toxicity
- · Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- · Ecotoxical effects:
- · Remark: Harmful to fish
- · Additional ecological information:
- · General notes:

Water hazard class 3 (Self-assessment): extremely hazardous for water

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into the ground.

- Harmful to aquatic organisms
- · Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · vPvB: Not applicable.
- · Other adverse effects No further relevant information available.

13 Disposal considerations

- · Waste treatment methods
- · Recommendation: Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- · Uncleaned packagings:
- · Recommendation: Disposal must be made according to official regulations.

14 Transport information

- · UN-Number
- · DOT, ADR, IMDG, IATA

UN1230

· UN proper shipping name

DOT

Methanol 1230 Methanol

· ADR · IMDG, IATA

METHANOL

- · Transport hazard class(es)
- ·DOT





· Class

3 Flammable liquids

(Contd. on page 8)

Printing date 07/15/2016 Reviewed on 07/15/2016

Product Name: Purgeable Aromatics for Gasoline Identification

	(Contd. of page 7)
· Label · ADR	3, 6.1
· Class · Label	3 Flammable liquids 3+6.1
·IMDG	310.1
· Class · Label	3 Flammable liquids 3/6.1
· IATA	
· Class · Label	3 Flammable liquids 3 (6.1)
Packing group DOT, ADR, IMDG, IATA	II .
· Environmental hazards:	Not applicable.
· Special precautions for user	Warning: Flammable liquids
· Danger code (Kemler): · EMS Number:	336 F-E.S-D
· Stowage Category	В
· Stowage Code	SW2 Clear of living quarters.
· Transport in bulk according to Annex II of MARPOL73/78 and the Code	IBC Not applicable.
· Transport/Additional information:	
· ADR · Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
·IMDG	
Limited quantities (LQ)	IL Code: E2
Excepted quantities (EQ)	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN 1230 METHANOL, 3 (6.1), 11

15 Regulatory information

- $\cdot \textit{Safety, health and environmental regulations/legislation specific for the substance or \textit{mixture} \\$
- · Sara
- · Section 355 (extremely hazardous substances):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

All ingredients are listed.

· TSCA (Toxic Substances Control Act):

All ingredients are listed.

(Contd. on page 9)

Product Name: Purgeable Aromatics for Gasoline Identification

Proposition 65	(Contd. of page
Chemicals known to cause cancer:	
106-46-7 1,4-dichlorobenzene	
71-43-2 benzene	
100-41-4 ethylbenzene	
Chemicals known to cause reproductive toxicity for females:	
None of the ingredients is listed.	
Chemicals known to cause reproductive toxicity for males:	
71-43-2 benzene	
Chemicals known to cause developmental toxicity:	
67-56-1 methanol	
71-43-2 henzene	
108-88-3 toluene	
Carcinogenic categories EPA (Environmental Protection Agency)	
108-38-3 m-xylene	
95-50-1 1,2-dichlorobenzene	
541-73-1 1.3-dichlorobenzene	D
71-43-2 benzene	D
95-47-6 o-xylene	A, K
108-90-7 chlorobenzene	/
106-42-3 p-xylene	D I
108-88-3 toluene	
100-41-4 ethylbenzene	D III
TLV (Threshold Limit Value established by ACGIII)	
108-38-3 m-xylene	
95-50-1 1,2-dichlorobenzene	A
106-46-7 1.4-dichlorobenzene	A.
71-43-2 benzene	A
95-47-6 a-xylene	A.
108-90-7 chlorobenzene	A.
106-42-3 p-xylene	A
108-88-3 toluene	A:
100-41-4 ethylbenzene	A.
1634-04-4 Methyl-tert-butyl ether	A.
NIOSH-Ca (National Institute for Occupational Safety and Health)	, and the same of
106-46-7 1,4-dichlorobenzene	THE STATE OF THE S
71-43-2 benzene	

GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS). - Hazard pictograms









GHS02

GHS06

GHS08

Signal word Danger

Hazard-determining components of labeling:

methanol

benzene

Hazard statements

H225 Highly flammable liquid and vapor.

H331 Toxic if inhaled,

H340 May cause genetic defects.

H350 May cause cancer.

H361 Suspected of damaging fertility or the unborn child.

H370 Causes damage to organs.

Precautionary statements

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Reviewed on 07/15/2016 Printing date 07/15/2016

Product Name: Purgeable Aromatics for Gasoline Identification

(Contd. of page 9)

Use explosion-proof electrical/ventilating/lighting/equipment.

Do not breathe dust/fume/gas/mist/vapors/spray.

If on skin (or hair): Take off immediately all contaminated clothing, Rinse skin with water/shower.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· National regulations:

· Information about limitation of use:

Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Department issuing SDS: product safety department

· Contact:

SPEX CertiPrep, LLC.

1-732-549-7144

Date of preparation / last revision 07/15/2016 / -

Abbreviations and acronyms:

ADR: Accord cumpeters are le transport des marchandless dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Roud) IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association ACGIH: American Conference of Governmental Industrial Hygienists

ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
IIMIS: Hagardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal dose, 30 percent
LD50: Lethal dose, 30 percent
PBT: Persistent, Bioaccumulative and Toxic
VPB: very Persistent and very Bioaccumulative

vPvB: very Persistent and very Bioaccumulative NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL. Permissible Exposure Limit REL. Recommended Exposure Limit

BEL Biological Esposure Limit
Flam. Liq. 2: Flammable liquids = Category 2
Acute Tox. 3: Acute toxicity = Category 3
Muta. 18: Germ cell mutagenicity = Category 18

Carc. IA: Carcinogenicity - Category IA
Repr 2: Reproductive toxicity - Category 2

STOT SE 1: Specific target organ toxicity (single exposure) = Category 1

US

I Identification

- Product identifier
- · Product Name: Heptane
- Part Number: S-2125-200
- Application of the substance / the mixture Certified Reference Material
- Details of the supplier of the safety data sheet
- Manufacturer/Supplier: SPEX CertiPrep, LLC.

203 Norcross Ave. Metuchen,

NJ 08840 USA

- Information department: product safety department
- Emergency telephone number: Emergency Phone Number (24 hours) CHEMTREC (800-424-9300)

Outside US: 703-527-3887

2 Hazard(s) identification

Classification of the substance or mixture



GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.



GHS06 Skull and crossbones

Acute Tox. 3 H331 Toxic if inhaled.



GHS08 Health hazard

STOT SE 1 H370 Causes damage to organs.

- Label elements
- · GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
- · Hazard pictograms







GHS02

GHS06

CHEUS

- · Signal word Danger
- · Hazard-determining components of labeling:
- methanol
- · Hazard statements

H225 Highly flammable liquid and vapor.

H331 Toxic if inhaled.

H370 Causes damage to organs.

· Precautionary statements

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Use explosion-proof electrical/ventilating/lighting/equipment.

Do not breathe dust/fune/gas/mist/vapors/spray.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

- · Classification system:
- · NFPA ratings (scale 0 4)



Health = 3 Fire = 3 Reactivity = 0

Reviewed on 07/15/2016

(Contd. of page 1)

Product Name: Heptane

· HMIS-ratings (scale 0 - 4)

HEALTH $^{\circ}$ 3 Health = *3 Fire = 3 Reactivity = 0

- · Other hazards
- · Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · vPvB: Not applicable.

3 Composition/information on ingredients

- · Description: Mixture of the substances listed below with nonhazardous additions.
- · Dangerous components:

67-56-1 methanol

99.98%

· Chemical identification of the substance/preparation

142-82-5 heptane

0.02%

4 First-aid measures

- · Description of first aid measures
- · General information:

Immediately remove any clothing soiled by the product.

Remove breathing apparatus only after contaminated clothing have been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration,

· After inhalation:

Supply fresh air or oxygen; call for doctor.

In case of unconsciousness place patient stably in side position for transportation.

- · After skin contact: Immediately wash with water and soap and rinse thoroughly,
- · After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
- · After swallowing: Do not induce vomiting; immediately call for medical help.
- · Information for Doctor:
- · Most important symptoms and effects, both acute and delayed No further relevant information available.
- · Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

- · Extinguishing media
- · Suitable extinguishing agents: CO2, sand, extinguishing powder, Do not use water.
- · For safety reasons unsuitable extinguishing agents: Water with full jet
- · Special hazards arising from the substance or mixture No further relevant information available.
- · Advice for firefighters
- · Protective equipment; Mouth respiratory protective device.

6 Accidental release measures

- · Personal precautions, protective equipment and emergency procedures Wear protective equipment. Keep unprotected persons away.
- · Environmental precautions:

Do not allow product to reach sewage system or any water course.

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers/ surface or ground water.

· Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents

· Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

Us -

715/2016 Reviewed on 07/15/2016

Product Name: Heptane

(Contd. of page 2)

7 Handling and storage

· Handling:

· Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Prevent formation of aerosols.

Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Keep respiratory protective device available.

- · Conditions for safe storage, including any incompatibilities
- · Storage
- · Requirements to be met by storerooms and receptacles: Store in a cool location.
- Information about storage in one common storage facility: Not required.
- · Further information about storage conditions:

Keep receptacle tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

· Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.
- Control parameters

Components with limit values that require monitoring at the workplace:

67-56-1 methanol

PEL Long-term value: 260 mg/m³, 200 ppm

REL Short-term value: 325 mg/m3, 250 ppm

Long-term value: 260 mg/m³, 200 ppm

Skin

TLV Short-term value: 328 mg/m³, 250 ppm

Long-term value: 262 mg/m3, 200 ppm

Skin: BEI

Ingredients with biological limit values:

67-56-1 methanol

BEI 15 mg/L

Medium: urine Time: end of shift

Parameter: Methanol (background, nonspecific)

- Additional information: The lists that were valid during the creation were used as basis.
- · Exposure controls
- · Personal protective equipment:
- General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Store protective clothing separately,

Avoid contact with the eyes and skin.

· Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

(Contd. on page 4)

Printing date 07/15/2016 Reviewed on 07/15/2016

Product Name: Heptane

(Contd. of page 3)

· Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eve protection:



Tightly sealed goggles

Physical and chemical propertie	es .
Information on basic physical and o General Information Appearance: Form:	chemical properties Liquid
Color:	According to product specification
Odor:	Characteristic
Odour Threshold:	Not applicable,
pH-value:	Not applicable,
Change in condition Melting point/Melting range: Boiling point/Boiling range:	Undetermined. 64 °C (147 °F)
Flash point:	11 °C (52 °F)
Flammability (solid, gaseous):	Not applicable,
Ignition temperature:	455 °C (851 °F)
Decomposition temperature:	Not applicable
Auto igniting:	Product is not selfigniting.
Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
Explosion limits:	
Lower:	5.5 Vol %
Upper:	44.0 Vol %
Vapor pressure at 20 °C (68 °F):	128 hPa (96 mm Hg)
Density at 20 °C (68 °F)	0.78998 g/cm³ (6.592 lbs/gul)
Relative density	Not applicable.
Vapor density	Not applicable.
Evaporation rate	Not applicable,
Solubility in / Miscibility with Water:	Not miscible or difficult to mix.
Partition coefficient (n-octanol/wate	er): Not applicable.
Viscosity:	
Dynamic:	Not applicable.
Kinematic:	Not applicable,
Solvent content:	100.4 %
Organic solvents:	100.0 %
VOC content: Other information	100.0 % No further relevant information available.

10 Stability and reactivity

- · Reactivity No further relevant information available.
- · Chemical stability
- · Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · Possibility of hazardous reactions No dangerous reactions known.
- · Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.
- · Hazardous decomposition products: No dangerous decomposition products known.

US

Reviewed on 07/15/2016

Product Name: Heptane

(Contd. of page 4)

11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:

· LD/LC50 values that are relevant for classification:

67-56-1 methanol

Oral | LD50 | 5628 mg/kg (rat)

Dermal LD50 | 15800 mg/kg (rabbit)

- · Primary irritant effect:
- on the skin: No irritant effect.
- on the eye: No irritating effect.
- · Sensitization: No sensitizing effects known.
- Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations: Toxic

· Carcinogenic categories

· IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

· NTP (National Toxicology Program)

None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

12 Ecological information

- · Toxicity
- · Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- · Additional ecological information:
- · General notes:
- Water hazard class I (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- · Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · vPvB: Not applicable.
- · Other adverse effects No further relevant information available.

13 Disposal considerations

- · Waste treatment methods
- · Recommendation: Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- · Uncleaned packagings:
- · Recommendation: Disposal must be made according to official regulations.

14 Transport information

- · UN-Number
- · DOT, ADR, IMDG, IATA

UN1230

UN proper shipping name
DOT

Methanol

ADR IMDG, IATA 1230 Methanol METHANOL

(Contd. on page 6)

Printing date 07/15/2016 Reviewed on 07/15/2016

Product Name: Heptane

(Contd. of page 5) · Transport hazard class(es) ·DOT · Class 3 Flammable liquids ·Label 3, 6.1 $\cdot ADR$ · Class 3 Flammable liquids Label 3+6.1 · IMDG · Class 3 Flammable liquids · Label 3/6.1 IATA · Class 3 Flanmable liquids Label 3 (6.1) Packing group
DOT, ADR, IMDG, IATA IIEnvironmental hazards: Not applicable. Warning: Flammable liquids Special precautions for user Danger code (Kemler): 336 F-E,S-D EMS Number: Stowage Category Stowage Code SW2 Clear of living quarters. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Not applicable. Transport/Additional information: ADR Excepted quantities (EQ) Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml IMDG Limited quantities (LQ) ILExcepted quantities (EQ) Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml · UN "Model Regulation": UN 1230 METHANOL, 3 (6.1), II

Reviewed on 07/15/2016

Product Name: Heptane

(Contd. of page 6)

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture Sara

Section 355 (extremely hazardous substances):

None of the ingredients is listed.

Section 313 (Specific toxic chemical listings):

67-56-1 methanol

TSCA (Toxic Substances Control Act):

All ingredients are listed,

Proposition 65

Chemicals known to cause cancer:

None of the ingredients is listed.

Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

Chemicals known to cause developmental toxicity:

67-56-1 methanol

Carcinogenic categories

EPA (Environmental Protection Agency)

142-82-5 heptane

TLV (Threshold Limit Value established by ACGIH)

None of the ingredients is listed.

NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).

· Hazard pictograms





GHS06



· Signal word Danger

· Hazard-determining components of labeling:

· Hazard statements

H225 Highly flammable liquid and vapor.

H331 Toxic if inhaled.

H370 Causes damage to organs.

· Precautionary statements

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Use explosion-proof electrical/ventilating/lighting/equipment.

Do not breathe dust/fume/gas/mist/vapors/spray.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- · Department issuing SDS: product safety department
- Contact:

SPEX CertiPrep, LLC.

1-732-549-7144

- Date of preparation / last revision 07/15/2016 / -
- Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the laternational Carriage of Dangerous Goods by Road] IMDG: International Maritime Code for Dangerous Goods

(Contd. on page 8)

Reviewed on 07/15/2016

Product Name: Heptane

DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Easting Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardons Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal concentration, 50 percent
PMT: Persistent, Bioaccumulative and Toxic
vPyB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Sufery
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REI: Recommended Exposure Limit
REI: Riological Exposure Limit
Flam. Liq. 2: Flammable liquids — Category 2
Acute Tox: 3: Acute toxicity — Category 3
STOT SE 1: Specific target organ toxicity (single exposure) — Category 1

(Contd. of page 7)

us.

1 Identification

- · Product identifier
- · Product Name: CUSTOM INT STD
- · Part Number: XINF-IS-4
- · Application of the substance / the mixture Certified Reference Material
- Details of the supplier of the safety data sheet
- Manufacturer/Supplier: SPEX CertiPrep, LLC.

203 Norcross Ave, Metuchen,

NJ 08840 USA

- Information department: product safety department
- Emergency telephone number: Emergency Phone Number (24 hours) CHEMTREC (800-424-9300)

2 Hazard(s) identification

Outside US: 703-527-3887

· Classification of the substance or mixture



GHS02 Flame

Flam, Liq. 2 H225 Highly flammable liquid and vapor.



GHS06 Skull and crossbones

Acute Tox. 3 H331 Toxic if inhaled,



GHS08 Health hazard

STOT SE 1 H370 Causes damage to organs.

- Label elements
- GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
- Hazard pictograms







GHS02 GI

GHS06

- Signal word Danger
- Hazard-determining components of labeling:
- methanol
- · Hazard statements

H225 Highly flammable liquid and vapor.

H331 Toxic if inhaled.

H370 Causes damage to organs,

Precautionary statements

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Use explosion-proof electrical/ventilating/lighting/equipment.

Do not breathe dust/fune/gas/mist/vapors/spray.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

- Classification system:
- NFPA ratings (scale 0 4)



Health = 3 Fire = 3 Reactivity = 0

Reviewed on 03/07/2016

(Contd. of page 1)

Product Name: CUSTOM INT STD

· HMIS-ratings (scale 0 - 4)

- · Other hazards
- · Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · vPvB; Not applicable.

3 Composition/information on ingredients

· Description: Mixture of the substances listed below with nonhazardous additions.

· Dangerous components:	
67-56-1 methanol	99.875%
· Chemical identification of the substance/preparation	
344-04-7 Bromopentafluorobenzene	0.05%
3855-82-1 1.4-Dichlorobenzene-d4	0.025%
3114-55-4 Chlorobenzene-d5	0.025%
462-06-6 fluorobenzene	0.025%

4 First-aid measures

- · Description of first aid measures
- · General information:

Immediately remove any clothing soiled by the product.

Remove breathing apparatus only after contaminated clothing have been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration.

· After inhalation:

Supply fresh air or oxygen; call for doctor.

In case of unconsciousness place patient stably in side position for transportation.

- · After skin contact: Immediately wash with water and soap and rinse thoroughly.
- After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
- · After swallowing: Do not induce vomiting; immediately call for medical help.
- · Information for Doctor:
- Most important symptoms and effects, both acute and delayed No further relevant information available.
- · Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

- Extinguishing media
- · Suitable extinguishing agents: CO2, sand, extinguishing powder. Do not use water.
- · For safety reasons unsuitable extinguishing agents: Water with full jet
- · Special hazards arising from the substance or mixture No further relevant information available.
- · Advice for firefighters
- · Protective equipment: Mouth respiratory protective device.

6 Accidental release measures

- · Personal precautions, protective equipment and emergency procedures Wear protective equipment. Keep unprotected persons away,
- · Environmental precautions:

Do not allow product to reach sewage system or any water course.

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers/ surface or ground water.

· Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents

· Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

(Contd. on page 3)

Reviewed on 03/07/2016

Product Name: CUSTOM INT STD

See Section 13 for disposal information.

(Contd. of page 2)

7 Handling and storage

- · Handling:
- · Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Prevent formation of aerosols.

· Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Keep respiratory protective device available.

- · Conditions for safe storage, including any incompatibilities
- Storage.
- · Requirements to be met by storerooms and receptacles: Store in a cool location.
- · Information about storage in one common storage facility: Not required.
- · Further information about storage conditions:

Keep receptacle tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

· Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- · Additional information about design of technical systems: No further data; see item 7.
- · Control parameters

· Components with limit values that require monitoring at the workplace:

67-56-1 methanol

PEL Long-term value: 260 mg/m³, 200 ppm REL Short-term value: 325 mg/m³, 250 ppm

Long-term value: 260 mg/m³, 200 ppm

Skin

TLV Short-term value: 328 mg/m³, 250 ppm Long-term value: 262 mg/m³, 200 ppm

Skin; BEI

· Ingredients with biological limit values:

67-56-1 methanol

BEI 15 mg/L

Medium: urine Time: end of shift

Parameter: Methanol (background, nonspecific)

- · Additional information: The lists that were valid during the creation were used as basis.
- · Exposure controls
- · Personal protective equipment:
- · General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

· Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture,

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

(Contd. on page 4)

Printing date 07/15/2016 Reviewed on 03/07/2016

Product Name: CUSTOM INT STD

· Material of gloves

(Contd. of page 3)

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eye protection:



Tightly sealed goggles

Physical and chemical properties		
Information on basic physical and General Information Appearance: Form: Color: Odor: Odour Threshold:	Liquid Colorless Alcohol-like	
pH-value:	Not applicable.	
Change in condition Melting point/Melting range: Boiling point/Boiling range:	Undetermined. 64 °C (147 °F)	
Flash point:	11 °C (52 °F)	
Flammability (solid, gaseous):	Not applicable.	
Ignition temperature:	455 °C (851 °F)	
Decomposition temperature:	Not applicable.	
Auto igniting:	Product is not selfigniting.	
Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible,	
Explosion limits: Lower: Upper:	5.5 Vol % 44.0 Vol %	
Vapor pressure at 20 °C (68 °F):	128 hPa (96 mm Hg)	
Density at 20°C (68°F) Relative density Vapor density Evaporation rate	0.79 g/cm³ (6.593 lbs/gal) Not applicable. Not applicable. Not applicable.	
Solubility in / Miscibility with Water:	Not miscible or difficult to mix.	
Partition coefficient (n-octanol/wat	er): Not applicable.	
Viscosity: Dynamic: Kinematic:	Not applicable. Not applicable.	
Solvent content: Organic solvents: VOC content: Other information	99.9 % 99.9 % No further relevant information available.	

10 Stability and reactivity

- · Reactivity No further relevant information available.
- · Chemical stability
- · Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · Possibility of hazardous reactions No dangerous reactions known.
- · Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.

(Contd. on page 5)

Reviewed on 03/07/2016

Product Name: CUSTOM INT STD

· Hazardous decomposition products: No dangerous decomposition products known.

(Contd. of page 4)

11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:

· LD/LC50 values that are relevant for classification:

67-56-1 methanol

Oral | LD50 | 5628 mg/kg (rat)

Dermal LD50 15800 mg/kg (rabbit)

- · Primary irritant effect:
- · on the skin: No irritant effect.
- · on the eye: No irritating effect.
- · Sensitization: No sensitizing effects known.
- · Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations: Toxic

· Carcinogenic categories

· IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

· NTP (National Toxicology Program)

None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

12 Ecological information

- · Toxicity
- · Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- · Additional ecological information:
- · General notes:
- Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- · Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · vPvB: Not applicable.
- · Other adverse effects No further relevant information available,

13 Disposal considerations

- · Waste treatment methods
- · Recommendation: Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- · Uncleaned packagings:
- · Recommendation: Disposal must be made according to official regulations.

14 Transport information

- · UN-Number
- · DOT, ADR, IMDG, IATA

UN1230

· UN proper shipping name · DOT, IATA

Methanol

· ADR · IMDG 1230 Methanol METHANOL

(Contd. on page 6)

Printing date 07/15/2016 Reviewed on 03/07/2016

Product Name: CUSTOM INT STD

(Contd. of page 5) · Transport hazard class(es) ·DOT 3 Flammable liquids · Class · Label 3, 6.1 · ADR 3 Flammable liquids · Class · Label 3+6.1 · IMDG · Class 3 Flammable liquids · Label 3/6.1 · IATA · Class 3 Flammable liquids · Label 3 (6.1) Packing group
DOT, ADR, IMDG, IATA IIEnvironmental hazards: Not applicable. · Special precautions for user Warning: Flammable liquids Danger code (Kemler): 336 · EMS Number: F-E,S-D· Stowage Category SW2 Clear of living quarters. Stowage Code Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable. Transport/Additional information: · ADR Code: E2 · Excepted quantities (EQ) Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml · IMDG Limited quantities (LQ) ILExcepted quantities (EQ) Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml UN 1230 METHANOL, 3 (6.1), II UN "Model Regulation":

Reviewed on 03/07/2016

Product Name: CUSTOM INT STD

(Contd. of page 6)

15 Regulatory information

· Safety, health and environmental regulations/legislation specific for the substance or mixture · Sara

Section 355 (extremely hazardous substances):

None of the ingredients is listed.

Section 313 (Specific toxic chemical listings):

67-56-1 methanol

TSCA (Toxic Substances Control Act):

67-56-1 methanol

344-04-7 Bromopentafluorobenzene

462-06-6 fluorobenzene

Proposition 65

· Chemicals known to cause cancer:

None of the ingredients is listed.

Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

Chemicals known to cause developmental toxicity:

67-56-1 methanol

· Carcinogenic categories

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

· TLV (Threshold Limit Value established by ACGIH)

None of the ingredients is listed.

NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).

· Hazard pictograms







GHS02

GHS06

· Signal word Danger

· Hazard-determining components of labeling:

methanol

Hazard statements

H225 Highly flammable liquid and vapor.

H331 Toxic if inhaled.

H370 Causes damage to organs.

· Precautionary statements

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Use explosion-proof electrical/ventilating/lighting/equipment.

Do not breathe dust/fume/gas/mist/vapors/spray.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- · Department issuing SDS: product safety department
- Contact:

SPEX CertiPrep, LLC.

1-732-549-7144

Reviewed on 03/07/2016

(Contd. of page 7)

Product Name: CUSTOM INT STD

- Date of preparation / last revision 07/15/2016 / =

· Abbreviations and acronyms:

Abraviations and acronyms:

ABR. Accord europeen sur le transport des nurchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods IMDG. International Maritime Code for Dangerous Goods

DOT: US Department of Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

ELINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA. National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC Volutile Organic Compounds (USA EU)

LC50: Lethal dose, 30 percent

DBD: Lethal dose, 50 percent

PBT: Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TI.V. Threshold Limit Value

PEL. Permissible Exposure Limit

BEI: Biological Exposure Limit

BEI: Biological Exposure Limit

BEI: Biological Exposure Limit

Flam. Liq. 2: Flammable liquids — Category 2

Actur Tox. 3: Acute Toxic iric — Category 3

STOT SE 1: Specific target organ toxicity (single exposure) — Category 1

Reviewed on 03/07/2016

I Identification

- · Product identifier
- · Product Name: TRIHALOMETHANES
- · Part Number: THM-X-400
- · Application of the substance / the mixture Certified Reference Material
- · Details of the supplier of the safety data sheet
- Manufacturer/Supplier: SPEX CertiPrep, LLC. 203 Norcross Ave, Metuchen, NJ 08840 USA
- · Information department: product safety department
- Emergency telephone number: Emergency Phone Number (24 hours) CHEMTREC (800-424-9300) Outside US: 703-527-3887

2 Hazard(s) identification

· Classification of the substance or mixture



GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.



GHS06 Skull and crossbones

Acute Tox. 3 H331 Toxic if inhaled.



GHS08 Health hazard

STOT SE 1 H370 Causes damage to organs.

- · Label elements
- · GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
- · Hazard pictograms







GHS02

GHS06

GHS08

- · Signal word Danger
- · Hazard-determining components of labeling:

methanol

· Hazard statements

H225 Highly flammable liquid and vapor.

H331 Toxic if inhaled.

H370 Causes damage to organs.

Precautionary statements

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Use explosion-proof electrical/ventilating/lighting/equipment.

Do not breathe dust/fume/gas/mist/vapors/spray.

If on skin (or hair): Take off immediately all contaminated clothing, Rinse skin with water/shower.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

- · Classification system:
- · NFPA ratings (scale 0 4)



Health = 3 Fire = 3 Reactivity = 0

(Contd, of page 1)

Product Name: TRIHALOMETHANES

· HMIS-ratings (scale 0 - 4)

HEALTH *3 Health = *3 Fire = 3 Reactivity = 0

- · Other hazards
- · Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · vPvB: Not applicable.

3 Composition/information on ingredients

· Description: Mixture of the substances listed below with nonhazardous additions,

· Dangerous components;	
67-56-1 methanol	99.849
· Chemical identification of the substance/preparation	
75-27-4 bromodichloromethane	0.049
75-25-2 brounform	0.049
67-66-3 chloroform	0.049
124-48-1 dibromochloromethane	0.049

4 First-aid measures

- · Description of first aid measures
- · General information:

Immediately remove any clothing soiled by the product,

Remove breathing apparatus only after contaminated clothing have been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration.

· After inhalation:

Supply fresh air or oxygen; call for doctor.

In case of unconsciousness place patient stably in side position for transportation.

- · After skin contact: Immediately wash with water and soap and rinse thoroughly,
- · After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
- · After swallowing: Do not induce vomiting; immediately call for medical help.
- · Information for Doctor:
- Most important symptoms and effects, both acute and delayed No further relevant information available.
- · Indication of any immediate medical attention and special treatment needed No further relevant information available,

5 Fire-fighting measures

- · Extinguishing media
- · Suitable extinguishing agents: CO2, sand, extinguishing powder. Do not use water.
- · For safety reasons unsuitable extinguishing agents: Water with full jet
- · Special hazards arising from the substance or mixture No further relevant information available.
- · Advice for firefighters
- Protective equipment: Mouth respiratory protective device.

6 Accidental release measures

- · Personal precautions, protective equipment and emergency procedures Wear protective equipment. Keep unprotected persons away.
- · Environmental precautions:

Do not allow product to reach sewage system or any water course.

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers/ surface or ground water.

· Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents

Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

(Contd. on page 3)

Reviewed on 03/07/2016

Product Name: TRIHALOMETHANES

See Section 13 for disposal information,

(Contd. of page 2)

7 Handling and storage

- · Handling:
- · Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Prevent formation of aerosols.

· Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Keep respiratory protective device available.

- · Conditions for safe storage, including any incompatibilities
- · Storage:
- · Requirements to be met by storerooms and receptacles: Store in a cool location.
- Information about storage in one common storage facility: Not required.

Further information about storage conditions:

Keep receptacle tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.
- · Control parameters

· Components with limit values that require monitoring at the workplace:

67-56-1 methanol

PEL Long-term value: 260 mg/m³, 200 ppm REL Short-term value: 325 mg/m³, 250 ppm

Long-term value: 325 mg/m², 250 ppm Long-term value: 260 mg/m³, 200 ppm

Skin

TLV Short-term value: 328 mg/m³, 250 ppm Long-term value: 262 mg/m³, 200 ppm

Skin; BEI

· Ingredients with biological limit values:

67-56-1 methanol

BEI 15 mg/L

Medium: urine Time: end of shift

Parameter: Methanol (background, nonspecific)

- · Additional information: The lists that were valid during the creation were used as basis.
- · Exposure controls
- · Personal protective equipment:
- · General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

· Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

(Contd. on page 4)

Reviewed on 03/07/2016

Product Name: TRIHALOMETHANES

· Material of gloves

(Contd. of page 3)

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- · Penetration time of glove material
- The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- · Eye protection:



Tightly sealed goggles

Information on basic physical and o	shawing appropriate
information on basic physical and to General Information Appearance: Form: Color: Odor: Odour Threshold:	Liquid According to product specification Characteristic Not applicable.
pH-value:	Not applicable.
Change in condition Melting point/Melting range: Boiling point/Boiling range:	Undetermined. 64 °C (147 °F)
Flash point:	11 °C (52 °F)
Flammability (solid, gaseous):	Not applicable.
Ignition temperature:	455 °C (851 °F)
Decomposition temperature:	Not applicable,
Auto igniting:	Product is not selfigniting
Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
Explosion limits: Lower: Upper:	5.5 Vol % 44.0 Vol %
Vapor pressure at 20 °C (68 °F):	128 hPa (96 mm Hg)
Density at 20°C (68°F) Relative density Vapor density Evaporation rate	0.79225 g/cm³ (6.611 lbs/gal) Not applicable. Not applicable. Not applicable.
Solubility in / Miscibility with Water:	Not miscible or difficult to mix.
Partition coefficient (n-octanol/wate	er); Not applicable.
Viscosity: Dynamic: Kinematic:	Not applicable. Not applicable.
Solvent content: Organic solvents: VOC content: Other information	99.9 % 99.9 % No further relevant information available.

10 Stability and reactivity

- · Reactivity No further relevant information available.
- · Chemical stability
- · Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · Possibility of hazardous reactions No dangerous reactions known.
- · Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.

(Contd. on page 5)

Reviewed on 03/07/2016

Product Name: TRIHALOMETHANES

· Hazardous decomposition products: No dangerous decomposition products known.

(Contd. of page 4)

11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:

· LD/LC50 values that are relevant for classification:

67-56-1 methanol

Oral | LD50 | 5628 mg/kg (rat)

Dermal LD50 15800 mg/kg (rabbit)

- · Primary irritant effect:
- · on the skin: No irritant effect.
- · on the eye: No irritating effect.
- · Sensitization: No sensitizing effects known.
- · Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations:

75-27-4 bromodichloromethane	[2B
75-25-2 bromoform	3
67-66-3 chloroform	26
124-48-1 dibromochloromethane	3
NTP (National Toxicology Program)	
75-27-4 bromodichloromethane	R
67-66-3 chloroform	R
OSHA-Ca (Occupational Safety & Health Administration)	
None of the ingredients is listed,	

12 Ecological information

- · Toxicity
- · Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- · Additional ecological information:
- · General notes:

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- · Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · vPvB: Not applicable.
- · Other adverse effects No further relevant information available.

13 Disposal considerations

- · Waste treatment methods
- · Recommendation: Must not be disposed of together with household garbage. Do not allow product to reach sewage system,
- · Uncleaned packagings:
- · Recommendation; Disposal must be made according to official regulations,

14 Transport information

- · UN-Number
- · DOT, ADR, IMDG, IATA

UN1230

- · UN proper shipping name
- · DOT, IATA

Methanol

(Contd. on page 6)

Product Name: TRIHALOMETHANES

	(Contd. of page
ADR IMDG	1230 Methanol METHANOL
Transport hazard class(es)	
DOT	
A	
Sept.	
TEUNE	
3 6/	
Class	3 Flammable liquids
Label	3, 6,1
ADR	
920 P	
No. of	
4	
Class	3 Flammable liquids
Label	3+6.1
IMDG	
A	
16 Sec.	
The state of the s	
Class Labei	3 Flammable liquids 3/6.1
**	
Class	3 Flanunable liquids
Label	3 Flanunable liquids 3 (6.1)
Label Packing group	3 (6.1)
Label Packing group DOT, ADR, IMDG, IATA	3 (6.1) II
Label Packing group DOT, ADR, IMDG, IATA Environmental hazards:	3 (6.1) II Not applicable.
Label Packing group DOT, ADR, IMDG, IATA Environmental hazards: Special precautions for user	3 (6.1) II Not applicable. Warning: Flammable liquids
Label Packing group DOT, ADR, IMDG, IATA Environmental hazards: Special precautions for user Danger code (Kemler): EMS Number:	3 (6.1) II Not applicable.
Label Packing group DOT, ADR, IMDG, IATA Environmental hazards: Special precautions for user Danger code (Kemler): EMS Number: Stowage Category	3 (6.1) II Not applicable. Warning: Flammable liquids 336 F-E,S-D B
Label Packing group DOT, ADR, IMDG, IATA Environmental hazards: Special precautions for user Danger code (Kemler): EMS Number: Stowage Category Stowage Code	3 (6.1) II Not applicable. Warning: Flammable liquids 336 F-E,S-D B SW2 Clear of living quarters.
Label Packing group DOT, ADR, IMDG, IATA Environmental hazards: Special precautions for user Danger code (Kemler): EMS Number: Stowage Category Stowage Code Transport in bulk according to Annex II of MARI	3 (6.1) II Not applicable. Warning: Flammable liquids 336 F-E,S-D B SW2 Clear of living quarters.
Label Packing group DOT, ADR, IMDG, IATA Environmental hazards: Special precautions for user Danger code (Kemler): EMS Number: Stowage Category Stowage Code Transport in bulk according to Annex II of MARI Code	3 (6.1) II Not applicable. Warning: Flammable liquids 336 F-E,S-D B SW2 Clear of living quarters.
Label Packing group DOT, ADR, IMDG, IATA Environmental hazards: Special precautions for user Danger code (Kemler): EMS Number: Stowage Category Stowage Code Transport in bulk according to Annex II of MARI Code Transport/Additional information: ADR	3 (6.1) II Not applicable. Warning: Flammable liquids 336 F-E,S-D B SW2 Clear of living quarters.
Label Packing group DOT, ADR, IMDG, IATA Environmental hazards: Special precautions for user Danger code (Kemler): EMS Number: Stowage Category Stowage Code Transport in bulk according to Annex II of MARI Code Transport/Additional information: ADR	3 (6.1) II Not applicable. Warning: Flammable liquids 336 F-E,S-D B SW2 Clear of living quarters. POL73/78 and the IBC Not applicable. Code: E2
Label Packing group DOT, ADR, IMDG, IATA Environmental hazards: Special precautions for user Danger code (Kemler): EMS Number: Stowage Category Stowage Code Transport in bulk according to Annex II of MARI Code Transport/Additional information: ADR	3 (6.1) II Not applicable. Warning: Flammable liquids 336 F-E,S-D B SW2 Clear of living quarters. POL73/78 and the IBC Not applicable. Code: E2 Maximum net quantity per inner packaging: 30 ml
Label Packing group DOT, ADR, IMDG, IATA Environmental hazards: Special precautions for user Danger code (Kemler): EMS Number: Stowage Category Stowage Code Transport in bulk according to Annex II of MARI Code Transport/Additional information: ADR Excepted quantities (EQ)	3 (6.1) II Not applicable. Warning: Flammable liquids 336 F-E,S-D B SW2 Clear of living quarters. POL73/78 and the IBC Not applicable. Code: E2
Label Packing group DOT, ADR, IMDG, IATA Environmental hazards: Special precautions for user Danger code (Kemler): EMS Number: Stowage Category Stowage Code Transport in bulk according to Annex II of MARI Code Transport/Additional information: ADR Excepted quantities (EQ)	3 (6.1) II Not applicable. Warning: Flammable liquids 336 F-E,S-D B SW2 Clear of living quarters. POL73/78 and the IBC Not applicable. Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
Label Packing group DOT, ADR, IMDG, IATA Environmental hazards: Special precautions for user Danger code (Kemler): EMS Number: Stowage Category Stowage Code Transport in bulk according to Annex II of MARI Code Transport/Additional information: ADR Excepted quantities (EQ) IMDG Limited quantities (LQ)	II Not applicable. Warning: Flammable liquids 336 F-E,S-D B SW2 Clear of living quarters. POL73/78 and the IBC Not applicable. Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
Label Packing group DOT, ADR, IMDG, IATA Environmental hazards: Special precautions for user Danger code (Kemler): EMS Number: Stowage Category Stowage Code Transport in bulk according to Annex II of MARI Code Transport/Additional information: ADR Excepted quantities (EQ)	II Not applicable. Warning: Flammable liquids 336 F-E,S-D B SW2 Clear of living quarters. POL73/78 and the IBC Not applicable. Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml IL Code: E2 Maximum net quantity per inner packaging: 30 ml
Label Packing group DOT, ADR, IMDG, IATA Environmental hazards: Special precautions for user Danger code (Kemler): EMS Number: Stowage Category Stowage Code Transport in bulk according to Annex II of MARI Code Transport/Additional information: ADR Excepted quantities (EQ) IMDG Limited quantities (LQ)	II Not applicable. Warning: Flammable liquids 336 F-E,S-D B SW2 Clear of living quarters. POL73/78 and the IBC Not applicable. Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml IL Code: E2

Product Name: TRIHALOMETHANES

(Contd. of page 6)

15 Regulatory information · Safety, health and environmental regulations/legislation specific for the substance or mixture · Section 355 (extremely hazardous substances): 67-66-3 chloroform · Section 313 (Specific toxic chemical listings): 67-56-1 methanol 75-27-4 bromodichloromethane 75-25-2 bromoform 67-66-3 chloroform · TSCA (Toxic Substances Control Act): All ingredients are listed. · Proposition 65 · Chemicals known to cause cancer: 75-27-4 bromodichloromethane 75-25-2 bromoform 67-66-3 chloroform · Chemicals known to cause reproductive toxicity for females: None of the ingredients is listed. · Chemicals known to cause reproductive toxicity for males: None of the ingredients is listed. · Chemicals known to cause developmental toxicity: 67-56-1 methanol 67-66-3 chloroform Carcinogenic categories EPA (Environmental Protection Agency) 75-27-4 bromodichloromethane **B2** 75-25-2 bromoform R? 67-66-3 chloroform B2. L, NL 124-48-1 dibromochloromethane TLV (Threshold Limit Value established by ACGIH) 75-25-2 bromoform A367-66-3 chloroform A3 NIOSH-Ca (National Institute for Occupational Safety and Health) 67-66-3 chloroform

GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
- Hazard pictograms







GHS02

GHS06

GHS08

- Signal word Danger
- Hazard-determining components of labeling: methanol
- Hazard statements

H225 Highly flammable liquid and vapor.

H331 Toxic if inhaled.

H370 Causes damage to organs.

Precautionary statements

Keep away from heat/sparks/open flames/hot surfaces. No smoking,

Use explosion-proof electrical/ventilating/lighting/equipment.

Do not breathe dust/fume/gas/mist/vapors/spray.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower,

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 8)

Product Name: TRIHALOMETHANES

(Contd. of page 7)

Reviewed on 03/07/2016

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- · Department issuing SDS: product safety department
- · Contact:

SPEX CertiPrep, LLC.

1-732-549-7144

· Date of preparation / last revision 07/15/2016 / -

· Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) IMDG: International Maritime Code for Dangerous Goods

IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European List of Nonfied Chemical Substances
EINECS: European List of Nonfied Chemical Substances
EINECS: European List of Nonfied Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Five Protection Association (USA)
IBMIS: Hazardous Materials Identification System (USA)
VOC: Velocity Organic Communical (USA)

VOC: Volatile Organic Compounds (USA, EU) LC50: Lethal concentration, 50 percent

LUSG: Lettual concentration, in percent
LDSG: Lettual dose, 30 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB:, very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value

PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
REL: Biological Exposure Limit
Flom. Lig. 2: Flammable liquids - Category 2
Acute Tox. 3: Acute toxicity - Category 3
TOTS FE. 1. Security - Category 3

STOT SE 1: Specific target organ toxicity (single exposure) - Category 1

1 Identification

- · Product identifier
- · Product Name: METHANOL
- · Part Number: XS-2380-30ML
- · CAS Number:
- 67-56-1
- · EC number:
- 200-659-6
- · Index number:
- 603-001-00-X
- · Application of the substance / the mixture Certified Reference Material
- · Details of the supplier of the safety data sheet
- · Manufacturer/Supplier:

SPEX CertiPrep, LLC.

203 Norcross Ave. Metuchen.

NJ 08840 USA

- · Information department: product safety department
- · Emergency telephone number:

Emergency Phone Number (24 hours)

CHEMTREC (800-424-9300)

Outside US: 703-527-3887

2 Hazard(s) identification

Classification of the substance or mixture



GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.



GHS06 Skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.

Acute Tox. 3 H311 Toxic in contact with skin.

Acute Tox. 3 H331 Toxic if inhaled.



GHS08 Health hazard

STOT SE 1 H370 Causes damage to organs.

- · Label elements
- · GHS label elements The substance is classified and labeled according to the Globally Harmonized System (GHS).
- · Hazard pictograms







GHS02

GHS06

GHS08

- · Signal word Danger
- · Hazard-determining components of labeling:

methanol

· Hazard statements

H225 Highly flammable liquid and vapor.

H301+H311+H331 Toxic if swallowed, in contact with skin or if inhaled.

H370 Causes damage to organs.

· Precautionary statements

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Use explosion-proof electrical/ventilating/lighting/equipment.

IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

Store locked up.

(Contd. on page 2)

Reviewed on 03/07/2016

(Contd. of page 1)

Product Name: METHANOL

Dispose of contents/container in accordance with local/regional/national/international regulations.

· Classification system:

· NFPA ratings (scale 0 - 4)



Health = 3 Fire = 3 Reactivity = 0

· HMIS-ratings (scale 0 - 4)



Health = *3 Fire = 3 Reactivity = 0

- · Other hazards
- · Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · vPvB: Not applicable.

3 Composition/information on ingredients

- · Chemical characterization: Substances
- · CAS No. Description
- 67-56-1 methanol
- · Identification number(s)
- · EC number: 200-659-6
- · Index number: 603-001-00-X

4 First-aid measures

- · Description of first aid measures
- · General information:

Immediately remove any clothing soiled by the product,

Remove breathing apparatus only after contaminated clothing have been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration.

· After inhalation:

Supply fresh air or oxygen; call for doctor.

In case of unconsciousness place patient stably in side position for transportation.

- · After skin contact: Immediately wash with water and soap and rinse thoroughly.
- · After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
- · After swallowing: Do not induce vomiting; immediately call for medical help.
- · Information for Doctor:
- Most important symptoms and effects, both acute and delayed No further relevant information available.
- Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

- · Extinguishing media
- · Suitable extinguishing agents: CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- · Special hazards arising from the substance or mixture No further relevant information available.
- · Advice for firefighters
- · Protective equipment: Mouth respiratory protective device.

6 Accidental release measures

- · Personal precautions, protective equipment and emergency procedures Wear protective equipment. Keep unprotected persons away.
- · Environmental precautions:

Prevent seepage into sewage system, workpits and cellars.

Dilute with plenty of water.

· Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

- Reference to other sections

See Section 7 for information on safe handling.

(Contd. on page 3)

Reviewed on 03/07/2016

Product Name: METHANOL

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

(Contd. of page 2)

7 Handling and storage

- · Handling:
- Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Keep respiratory protective device available.

- · Conditions for safe storage, including any incompatibilities
- · Storage:
- · Requirements to be met by storerooms and receptacles: Store in a cool location.
- · Information about storage in one common storage facility: Not required.
- · Further information about storage conditions:

Keep receptacle tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

· Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- · Additional information about design of technical systems: No further data; see item 7.
- · Control parameters

· Components with limit values that require monitoring at the workplace:

67-56-1 methanol

PEL Long-term value: 260 mg/m³, 200 ppm

REL Short-term value: 325 mg/m3, 250 ppm

Long-term value: 260 mg/m3, 200 ppm

Skin

TLV Short-term value: 328 mg/m3, 250 ppm

Long-term value: 262 mg/m3, 200 ppm

Skin; BEI

Ingredients with biological limit values:

67-56-1 methanol

BEI 15 mg/L

Medium: urine

Time: end of shift

Parameter: Methanol (background, nonspecific)

- · Additional information: The lists that were valid during the creation were used as basis,
- · Exposure controls
- · Personal protective equipment:
- General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

(Contd. on page 4)

Printing date 07/15/2016 Reviewed on 03/07/2016

Product Name: METHANOL

· Material of gloves

(Contd. of page 3)

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eye protection:



Tightly sealed goggles

Physical and chemical propertie	
Information on basic physical and c	hemical properties
General Information	
Appearance:	
Form:	Liquid
Color:	Colorless
Odor:	Alcohol-like
Odour Threshold:	Not applicable,
pH-value:	Not applicable,
Change in condition	
Melting point/Melting range:	-98 °C (-144 °F)
Boiling point/Boiling range:	64.7 °C (148 °F)
Flash point:	11 °C (52 °F)
Flammability (solid, gaseous):	Not applicable.
Ignition temperature:	455 °C (851 °F)
Decomposition temperature:	Not applicable,
Auto igniting:	Not determined.
Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
Explosion limits:	
Lower:	5.5 Vol %
Upper:	44 Vol %
Vapor pressure at 20 °C (68 °F):	128 hPa (96 mm Hg)
Density at 20 °C (68 °F)	0.79 g/cm ³ (6.593 lbs/gal)
Relative density	Not applicable.
Vapor density	Not applicable.
Evaporation rate	Not applicable,
Solubility in / Miscibility with	
Water:	Fully miscible.
Partition coefficient (n-octanol/wate	er): Not applicable.
Viscosity:	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
Organic solvents:	100.0 %
VOC content:	100.0 %
Other information	No further relevant information available.

10 Stability and reactivity

- · Reactivity No further relevant information available.
- Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- Possibility of hazardous reactions No dangerous reactions known.
- · Conditions to avoid No further relevant information available.

(Contd. on page 5)

Reviewed on 03/07/2016

Product Name: METHANOL

- Incompatible materials: No further relevant information available.

· Hazardous decomposition products: No dangerous decomposition products known.

(Contd. of page 4)

11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:

· LD/LC50 values that are relevant for classification:

67-56-1 methanol

Oral | LD50 | 5628 mg/kg (rat)

Dermal LD50 15800 mg/kg (rabbit)

· Primary irritant effect:

- · on the skin: No irritant effect.
- · on the eye: No irritating effect.
- · Sensitization: No sensitizing effects known.
- · Additional toxicological information:
- · Carcinogenic categories

· IARC (International Agency for Research on Cancer)

Substance is not listed.

· NTP (National Toxicology Program)

Substance is not listed.

· OSHA-Ca (Occupational Safety & Health Administration)

Substance is not listed.

12 Ecological information

- Toxicity
- · Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- · Additional ecological information:
- · General notes: Generally not hazardous for water
- · Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · vPvB: Not applicable.
- · Other adverse effects No further relevant information available.

13 Disposal considerations

- · Waste treatment methods
- · Recommendation: Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- · Uncleaned packagings:
- · Recommendation: Disposal must be made according to official regulations.
- · Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

- · UN-Number
- · DOT, ADR, IMDG, IATA

UN1230

- · UN proper shipping name
- · DOT, IATA

Methanol

· ADR - IMDG 1230 Methanol METHANOL

(Contd. on page 6)

Product Name: METHANOL

	(Contd. of pag
Transport hazard class(es)	
DOT	
A	
77,000	
The same of the sa	
20	
Class	3 Flammable liquids
Label	3, 6.1
ADR	
A 2	
No. of the second	
Class Label	3 Flammable liquids 3+6.1
IMDG	JT0.1
MIDG.	
100	
Class	3 Flammable liquids
Label	3/6.1
ATA	
Class	3 Flammable liquids
Label	3 Flammable liquids 3 (6.1)
Label Packing group	3 (6,1)
Label Packing group DOT, ADR, IMDG, IATA	3 (6.1) H
Label Packing group DOT, ADR, IMDG, IATA Environmental hazards:	3 (6.1) II Not applicable.
Label Packing group DOT, ADR, IMDG, IATA Environmental hazards: Special precautions for user Danger code (Kemler):	3 (6.1) II Not applicable, Warning: Flammable liquids 336
Label Packing group DOT, ADR, IMDG, IATA Environmental hazards: Special precautions for user Danger code (Kemler): EMS Number:	3 (6.1) II Not applicable, Warning: Flammable liquids 336 F-E,S-D
Label Packing group DOT, ADR, IMDG, IATA Environmental hazards: Special precautions for user Danger code (Kemler): EMS Number: Stowage Category	3 (6.1) II Not applicable. Warning: Flammable liquids 336 F-E,S-D B
Label Packing group DOT, ADR, IMDG, IATA Environmental hazards: Special precautions for user Danger code (Kemler): EMS Number: Stowage Category Stowage Code	3 (6.1) II Not applicable. Warning: Flammable liquids 336 F-E,S-D B SW2 Clear of living quarters.
Label Packing group DOT, ADR, IMDG, IATA Environmental hazards: Special precautions for user Danger code (Kemler): EMS Number: Stowage Category	3 (6.1) II Not applicable. Warning: Flammable liquids 336 F-E,S-D B SW2 Clear of living quarters.
Label Packing group DOT, ADR, IMDG, IATA Environmental hazards: Special precautions for user Danger code (Kemler): EMS Number: Stowage Category Stowage Code Fransport in bulk according to Annex II of MARP	3 (6.1) II Not applicable. Warning: Flammable liquids 336 F-E,S-D B SW2 Clear of living quarters.
Label Packing group DOT, ADR, IMDG, IATA Environmental hazards: Special precautions for user Danger code (Kemler): EMS Number: Stowage Category Stowage Code Fransport in bulk according to Annex II of MARP Code Fransport/Additional information:	3 (6.1) II Not applicable. Warning: Flammable liquids 336 F-E,S-D B SW2 Clear of living quarters.
Label Packing group DOT, ADR, IMDG, IATA Environmental hazards: Special precautions for user Danger code (Kemler): EMS Number: Stowage Category Stowage Code Fransport in bulk according to Annex II of MARP	3 (6.1) II Not applicable. Warning: Flammable liquids 336 F-E,S-D B SW2 Clear of living quarters.
Label Packing group DOT, ADR, IMDG, IATA Environmental hazards: Special precautions for user Danger code (Kemler): EMS Number: Stowage Category Stowage Code Fransport in bulk according to Annex II of MARP. Code Fransport/Additional information: ADR	3 (6.1) II Not applicable, Warning: Flammable liquids 336 F-E,S-D B SW2 Clear of living quarters. POL73/78 and the IBC Not applicable, Code: E2 Maximum net quantity per inner packaging: 30 ml
Label Packing group DOT, ADR, IMDG, IATA Environmental hazards: Special precautions for user Danger code (Kemler): EMS Number: Stowage Category Stowage Code Fransport in bulk according to Annex II of MARP Code Fransport/Additional information: ADR Excepted quantities (EQ)	3 (6.1) II Not applicable. Warning: Flammable liquids 336 F-E,S-D B SW2 Clear of living quarters. POL73/78 and the IBC Not applicable. Code: E2
Label Packing group DOT, ADR, IMDG, IATA Environmental hazards: Epecial precautions for user Danger code (Kemler): EMS Number: Stowage Category Stowage Code Fransport in bulk according to Annex II of MARP Code Fransport/Additional information: ADR Excepted quantities (EQ)	II Not applicable. Warning: Flammable liquids 336 F-E,S-D B SW2 Clear of living quarters. POL73/78 and the IBC Not applicable. Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
Label Packing group DOT, ADR, IMDG, IATA Environmental hazards: Epecial precautions for user Danger code (Kemler): EMS Number: Stowage Category Stowage Code Fransport in bulk according to Annex II of MARP Code Fransport/Additional information: ADR Excepted quantities (EQ)	Il Not applicable. Warning: Flammable liquids 336 F-E,S-D B SW2 Clear of living quarters. POL73/78 and the IBC Not applicable. Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
Label Packing group DOT, ADR, IMDG, IATA Environmental hazards: Epecial precautions for user Danger code (Kemler): EMS Number: Stowage Category Stowage Code Fransport in bulk according to Annex II of MARP Code Fransport/Additional information: ADR Excepted quantities (EQ)	II Not applicable. Warning: Flammable liquids 336 F-E,S-D B SW2 Clear of living quarters. POL73/78 and the IBC Not applicable. Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml IL Code: E2
Label Packing group DOT, ADR, IMDG, IATA Environmental hazards: Epecial precautions for user Danger code (Kemler): EMS Number: Stowage Category Stowage Code Fransport in bulk according to Annex II of MARP Code Fransport/Additional information: ADR Excepted quantities (EQ)	Il Not applicable. Warning: Flammable liquids 336 F-E,S-D B SW2 Clear of living quarters. POL73/78 and the IBC Not applicable. Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml

016 Reviewed on 03/07/2016

Product Name: METHANOL

(Contd. of page 6)

15 Regulatory information

- · Safety, health and environmental regulations/legislation specific for the substance or mixture
- Sara

· Section 355 (extremely hazardous substances):

Substance is not listed

· Section 313 (Specific toxic chemical listings):

Substance is listed.

· TSCA (Toxic Substances Control Act):

Substance is listed.

Proposition 65

· Chemicals known to cause cancer:

Substance is not listed.

· Chemicals known to cause reproductive toxicity for females:

Substance is not listed.

· Chemicals known to cause reproductive toxicity for males:

Substance is not listed.

· Chemicals known to cause developmental toxicity:

Substance is listed.

· Carcinogenic categories

· EPA (Environmental Protection Agency)

Substance is not listed.

· TLV (Threshold Limit Value established by ACGIH)

Substance is not listed.

· NIOSH-Ca (National Institute for Occupational Safety and Health)

Substance is not listed.

- · GHS label elements The substance is classified and labeled according to the Globally Harmonized System (GHS).
- · Hazard pictograms







GHS02

GHS08

- · Signal word Danger
- · Hazard-determining components of labeling:

methanol

· Hazard statements

H225 Highly flammable liquid and vapor.

H301+H311+H331 Toxic if swallowed, in contact with skin or if inhaled.

H370 Causes damage to organs.

· Precautionary statements

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Use explosion-proof electrical/ventilating/lighting/equipment.

IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- · Department issuing SDS: product safety department
- · Contact:
- SPEX CertiPrep, LLC.
- 1-732-549-7144
- · Date of preparation / last revision 07/15/2016 / -
- · Abbreviations and acronyms:

ADR: Accord compelen sure le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) IMDG: International Maritime Code for Dangerous Goods

(Contd. on page 8)

Reviewed on 03/07/2016

Product Name: METHANOL

DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Havardous Materials Identification System (USA)
VOC: Volutile Organic Compounds (USA, EU)
LCSO: Lethal concentration, 50 percent
LDSO: Dethal concentration, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vP-B: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Sofety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
BEI: Biological Exposure Limit
BEI: Biological Exposure Limit
BI: Biological Exposure Limit
Flam. Liq. 2: Flammable liquids — Category 2
Acute Tox, 3: Acute tox; 4: Acute Tox;

(Contd. of page 7)

1 Identification

- Product identifier
- Product Name: Custom 5 compound organic standard
- Part Number: XQ-1314
- Application of the substance / the mixture Certified Reference Material
- Details of the supplier of the safety data sheet
- · Manufacturer/Supplier:

SPEX CertiPrep, LLC.

203 Norcross Ave. Metuchen,

NJ 08840 USA

- · Information department: product safety department
- · Emergency telephone number:

Emergency Phone Number (24 hours)

CHEMTREC (800-424-9300)

Outside US: 703-527-3887

2 Hazard(s) identification

Classification of the substance or mixture



GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.



GHS06 Skull and crossbones

Acute Tox. 3 H331 Toxic if inhaled.



GHS08 Health hazard

STOT SE 1 H370 Causes damage to organs.

- · Label elements
- · GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
- · Hazard pictograms







GHS02

GHS06

GHS08

- · Signal word Danger
- · Hazard-determining components of labeling: methanol
- · Hazard statements

H225 Highly flammable liquid and vapor.

H331 Toxic if inhaled.

H370 Causes damage to organs.

· Precautionary statements

Keep away from heat/sparks/open flames/hot surfaces. No smoking, Use explosion-proof electrical/ventilating/lighting/equipment.

Do not breathe dust/fume/gas/mist/vapors/spray.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

- · Classification system:
- · NFPA ratings (scale 0 4)



Health = 3 Fire = 3 Reactivity = 0

(Contd. of page 1)

Reviewed on 03/01/2016 Printing date 07/15/2016

Product Name: Custom 5 compound organic standard

· HMIS-ratings (scale 0 - 4)

Health = *3Fire = 3Reactivity = 0REACTIVITY 0

· Other hazards

FIRE

- Results of PBT and vPvB assessment
- · PBT: Not applicable
- vPvB: Not applicable.

3 Composition/information on ingredients

Description: Mixture of the substances listed below with nonhazardous additions.

· Dangerous components;	
67-56-1 methanol	99.999
Chemical identification of the substance/preparation	
462-06-6 fluorobenzene	0.0029
105-53-3 diethyl mulonate	0.0029
3855-82-1 1,4-Dichlorobenzene-d4	0.0029
3114-55-4 Chlorobenzene-d5	0.0029
2037-26-5 (2H8)toluene	0.0029

4 First-aid measures

- · Description of first aid measures
- · General information:

Immediately remove any clothing soiled by the product.

Remove breathing apparatus only after contaminated clothing have been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration.

After inhalation:

Supply fresh air or oxygen; call for doctor.

In case of unconsciousness place patient stably in side position for transportation.

- · After skin contact: Immediately wash with water and soap and rinse thoroughly.
- After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
- · After swallowing: Do not induce vomiting; immediately call for medical help.
- · Information for Doctor:
- · Most important symptoms and effects, both acute and delayed No further relevant information available.
- · Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

- · Extinguishing media
- · Suitable extinguishing agents: CO2, sand, extinguishing powder. Do not use water.
- · For safety reasons unsuitable extinguishing agents: Water with full jet
- · Special hazards arising from the substance or mixture No further relevant information available.
- · Advice for firefighters
- · Protective equipment: Mouth respiratory protective device.

6 Accidental release measures

- · Personal precautions, protective equipment and emergency procedures Wear protective equipment. Keep unprotected persons away.
- · Environmental precautions:

Do not allow product to reach sewage system or any water course.

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers/surface or ground water.

· Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents

Reference to other sections

See Section 7 for information on safe handling.

(Contd. on page 3)

Reviewed on 03/01/2016

Product Name: Custom 5 compound organic standard

See Section 8 for information on personal protection equipment.

(Contd. of page 2)

7 Handling and storage

- · Handling:
- · Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

See Section 13 for disposal information.

Prevent formation of aerosols.

· Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Keep respiratory protective device available.

- · Conditions for safe storage, including any incompatibilities
- · Storage:
- · Requirements to be met by storerooms and receptacles: Store in a cool location.
- · Information about storage in one common storage facility: Not required.
- Further information about storage conditions:

Keep receptacle tightly sealed.

Store in cool, dry conditions in well scaled recentacles.

· Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data: see item 7.
- Control parameters

Components with limit values that require monitoring at the workplace:

67-56-1 methanol

PEL Long-term value: 260 mg/m3, 200 ppm

REL Short-term value: 325 mg/m3, 250 ppm

Long-term value: 260 mg/m3, 200 ppm

Skin

TLV Short-term value: 328 mg/m³, 250 ppm

Long-term value: 262 mg/m³, 200 ppm

Skin; BEI

Ingredients with biological limit values:

67-56-1 methanol

BEI 15 mg/L

Medium: urine

Time: end of shift

Parameter: Methanol (background, nonspecific)

Additional information: The lists that were valid during the creation were used as basis.

- Exposure controls
- Personal protective equipment:
- General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

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· Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- · Penetration time of glove material
- The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- · Eye protection:



Tightly sealed goggles

Physical and chemical propertie	s
Information on basic physical and c General Information	hemical properties
Appearance:	
Form:	Liquid
Color:	According to product specification
Odor:	Characteristic
Odour Threshold:	Not applicable.
pH-value:	Not applicable
Change in condition	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	64 °C (147 °F)
Flash point:	11 °C (52 °F)
Flammability (solid, gaseous):	Not applicable.
Ignition temperature:	455 °C (851 °F)
Decomposition temperature:	Not applicable
Auto igniting:	Product is not selfigniting.
Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
Explosion limits:	
Lower:	5.5 Vol %
Upper:	44.0 Vol %
Vapor pressure at 20 °C (68 °F):	128 hPa (96 mm Hg)
Density at 20 °C (68 °F)	0.78998 g/cm³ (6.592 lbs/gal)
Relative density	Not applicable.
Vapor density	Not applicable,
Evaporation rate	Not applicable.
Solubility in / Miscibility with	
Water:	Not miscible or difficult to mix.
Partition coefficient (n-octanol/wat	er): Not applicable.
Viscosity:	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
Solvent content:	
Organic solvents:	100.0 %
VOC content:	100.0 %
Other information	No further relevant information available.

10 Stability and reactivity

- · Reactivity No further relevant information available.
- · Chemical stability
- · Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · Possibility of hazardous reactions No dangerous reactions known.
- · Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.

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· Hazardous decomposition products: No dangerous decomposition products known.

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II Toxicological information

- · Information on toxicological effects
- · Acute toxicity:

LD/LC50 values that are relevant for classification:

67-56-1 methanol

Oral | LD50 | 5628 mg/kg (rat)

Dermal LD50 15800 mg/kg (rabbit)

- Primary irritant effect:
- · on the skin: No irritant effect.
- · on the eye: No irritating effect.
- · Sensitization: No sensitizing effects known.
- · Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations:

Toxic

· Carcinogenic categories

· IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

· NTP (National Toxicology Program)

None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

12 Ecological information

- · Toxicity
- · Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- · Additional ecological information:
- · General notes:

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- · Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · vPvB: Not applicable.
- · Other adverse effects No further relevant information available.

13 Disposal considerations

- · Waste treatment methods
- · Recommendation: Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- · Uncleaned packagings:
- · Recommendation: Disposal must be made according to official regulations.

14 Transport information

- · UN-Number
- · DOT, ADR, IMDG, IATA

UN1230

- · UN proper shipping name
- DOT, IATA
- ADR
- · IMDG

Methanol 1230 Methanol METHANOL

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	(Contd. of page 5)
· Transport hazard class(es)	
·DOT	
1 HEMATOME TONIC	
N/	
· Class	3 Flammable liquids
·Label	3. 6.1
· ADR	
· Class · Label	3 Flammable liquids 3+6.1
·IMDG	
A A	
161	
Class	3 Flammable liquids
· Label	3/6.1
· IATA	
· Class · Label	3 Flammable liquids 3 (6.1)
· Packing group	3 (0.1)
DOT, ADR, IMDG, IATA	И
· Environmental hazards:	Not applicable.
· Special precautions for user	Warning: Flammable liquids
Danger code (Kemler): EMS Number:	336 F-E,S-D
Stowage Category Stowage Code	B SW2 Clear of living quarters.
Transport in bulk according to Annex II of MARF	
Code	Not applicable.
· Transport/Additional information:	
·ADR	a t m
Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 500 ml
· IMDG	11
· Limited quantities (LQ) · Excepted quantities (EQ)	1L Code: E2
n d v dar	Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
IN 194 and Deputation 11.	UN 1230 METHANOL, 3 (6.1), ll
· UN "Model Regulation":	UN 1230 METHANOE, 3 (0.1), 11

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15 Regulatory information

- · Safety, health and environmental regulations/legislation specific for the substance or mixture · Sara
- · Section 355 (extremely hazardous substances):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

67-56-1 methanal

· TSCA (Toxic Substances Control Act):

67-56-1 methanol

462-06-6 fluorobenzene

105-53-3 diethyl malonate

Proposition 65

· Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

67-56-1 methanol

· Carcinogenic categories

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

· TLV (Threshold Limit Value established by ACGIH)

None of the ingredients is listed.

NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).

· Hazard pictograms







GHS02

GHS06

)6 GHS

- · Signal word Danger
- · Hazard-determining components of labeling:

methanol

· Hazard statements

H225 Highly flammable liquid and vapor.

H331 Toxic if inhaled.

H370 Causes damage to organs.

Precautionary statements

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Use explosion-proof electrical/ventilating/lighting/equipment.

Do not breathe dust/fume/gas/mist/vapors/spray.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- · Department issuing SDS: product safety department
- Contact:

SPEX CertiPrep. LLC.

1-732-549-7144

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· Date of preparation / last revision 07/15/2016 / -

· Abbreviations and acronyms:

ADR Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) IMDG. International Maritime Code for Dangerous Goods

AING Accord europeen sur te iransport accommended by the Compensation of Transport Almost and Society and Arta International Air Transport Almost and Industrial Hygienists ELINECS: European Inventory of Existing Commercial Chemical Substances ELINECS: European List of Notified Chemical Substances ELINECS: European List of Notified Chemical Substances ELINECS: European List of Notified Chemical Substances of Schemical Abstracts Service (division of the American Chemical Society) NFPA. National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vivils: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Sufety
OSHA, Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
BEL: Biological Exposure Limit
BEL: Biological Exposure Limit

REL: Biological Exposure Limit
Flum, Liq. 2: Flummable liquids – Category 2
Acute Too. 3: Acute toxicity – Category 3
STOT SE 1: Specific target organ toxicity (single exposure) – Category 3

US: