

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/04/2018

Reviewed on 06/04/2018

1 Identification

- **Product identifier**
- **Trade name:** THM-HM4C
- **Article number:** THM-HM4C
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
High-Purity Standards
PO Box 41727 SC 29423 United States
www.highpuritystandards.com
- **Information department:** Product safety department
- **Emergency telephone number:**
INFOTRAC
Emergency telephone numbers 1-800-535-5053
Other emergency telephone numbers 1-352-323-3500

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 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
trichloromethane
bromoform

(Contd. on page 2)

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/04/2018

Reviewed on 06/04/2018

Trade name: THM-HM4C

(Contd. of page 1)

· **Hazard statements**

H225 Highly flammable liquid and vapor.
H331 Toxic if inhaled.
H351 Suspected of causing cancer.
H361 Suspected of damaging fertility or the unborn child.
H370 Causes damage to organs.

· **Precautionary statements**

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Do not breathe dust/fume/gas/mist/vapors/spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF exposed or concerned: Get medical advice/attention.
Specific treatment (see on this label).
In case of fire: Use for extinction: CO2, powder or water spray.
Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



· **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: Mixtures**

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

(Contd. on page 3)

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/04/2018

Reviewed on 06/04/2018

Trade name: THM-HM4C

(Contd. of page 2)

· Dangerous components:		
67-56-1	methanol	99.2%
75-27-4	bromodichloromethane	0.2%
67-66-3	trichloromethane	0.2%
· Chemical identification of the substance/preparation		
124-48-1	dibromochloromethane	0.2%
75-25-2	bromoform	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:** 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:** 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 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.

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/04/2018

Reviewed on 06/04/2018

Trade name: THM-HM4C

(Contd. of page 3)

· **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.

· **Protective Action Criteria for Chemicals**

· **PAC-1:**

67-56-1	methanol	530 ppm
75-27-4	bromodichloromethane	1.3 mg/m ³
67-66-3	trichloromethane	2 ppm
124-48-1	dibromochloromethane	1.1 mg/m ³
75-25-2	bromoform	1.5 ppm

· **PAC-2:**

67-56-1	methanol	2,100 ppm
75-27-4	bromodichloromethane	14 mg/m ³
67-66-3	trichloromethane	64 ppm
124-48-1	dibromochloromethane	12 mg/m ³
75-25-2	bromoform	6.8 ppm

· **PAC-3:**

67-56-1	methanol	7200* ppm
75-27-4	bromodichloromethane	85 mg/m ³
67-66-3	trichloromethane	3,200 ppm
124-48-1	dibromochloromethane	73 mg/m ³
75-25-2	bromoform	41 ppm

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.

US

(Contd. on page 5)

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/04/2018

Reviewed on 06/04/2018

Trade name: **THM-HM4C**

(Contd. of page 4)

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:**

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.

At this time, the remaining constituent has no known exposure limits.

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

67-66-3 trichloromethane

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

· **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.

· **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:**

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 6)

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/04/2018

Reviewed on 06/04/2018

Trade name: THM-HM4C

(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

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form: Fluid

Color: Colorless

· **Odor:** Characteristic

· **Odor threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

Melting point/Melting range: Undetermined.

Boiling point/Boiling range: 64.7 °C (148.5 °F)

· **Flash point:** 11 °C (51.8 °F)

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:** 455 °C (851 °F)

· **Decomposition temperature:** Not determined.

· **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 Vol %

· **Vapor pressure at 20 °C (68 °F):** 128 hPa (96 mm Hg)

· **Density at 20 °C (68 °F):** 0.80126 g/cm³ (6.68651 lbs/gal)

· **Bulk density:** 801 kg/m³

· **Relative density:** Not determined.

· **Vapor density:** Not determined.

· **Evaporation rate:** Not determined.

· **Solubility in / Miscibility with**

Water: Not miscible or difficult to mix.

· **Partition coefficient (n-octanol/water):** Not determined.

(Contd. on page 7)

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/04/2018

Reviewed on 06/04/2018

Trade name: **THM-HM4C**

(Contd. of page 6)

- | | |
|----------------------------|--|
| · Viscosity: | |
| Dynamic: | Not determined. |
| Kinematic: | Not determined. |
| · Solvent content: | |
| Organic solvents: | 99.4 % |
| VOC content: | 99.40 % |
| | 796.5 g/l / 6.65 lb/gal |
| · Solids content: | |
| | 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:**

67-56-1 methanol

Oral	LD50	5,628 mg/kg (rat)
Dermal	LD50	15,800 mg/kg (rabbit)

67-66-3 trichloromethane

Oral	LD50	908 mg/kg (rat)
Dermal	LD50	75 mg/kg (rat)

- **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)**

75-27-4	bromodichloromethane	2B
67-66-3	trichloromethane	2B
124-48-1	dibromochloromethane	3

(Contd. on page 8)

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/04/2018

Reviewed on 06/04/2018

Trade name: THM-HM4C

(Contd. of page 7)

75-25-2	bromoform	3
· NTP (National Toxicology Program)		
75-27-4	bromodichloromethane	R
67-66-3	trichloromethane	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 2 (Self-assessment): 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.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- | | |
|----------------------------------|--|
| · UN-Number | |
| · DOT, ADR, IMDG, IATA | UN1992 |
| · UN proper shipping name | |
| · DOT | Flammable liquids, toxic, n.o.s. (Methanol) |
| · ADR | 1992 Flammable liquids, toxic, n.o.s. (Methanol) |
| · IMDG, IATA | FLAMMABLE LIQUID, TOXIC, N.O.S. (METHANOL) |

(Contd. on page 9)

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/04/2018

Reviewed on 06/04/2018

Trade name: THM-HM4C

(Contd. of page 8)

· Transport hazard class(es)
· DOT


· Class 3 Flammable liquids
· Label 3, 6.1

· ADR


· Class 3 Flammable liquids
· 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 II

· Environmental hazards: Not applicable.

· Special precautions for user Warning: Flammable liquids
· Danger code (Kemler): 336
· EMS Number: F-E,S-D
· Stowage Category B
· Stowage Code SW2 Clear of living quarters.

· Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

(Contd. on page 10)

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/04/2018

Reviewed on 06/04/2018

Trade name: THM-HM4C

(Contd. of page 9)

· Transport/Additional information:
· DOT
· Quantity limitations

On passenger aircraft/rail: 1 L

On cargo aircraft only: 60 L

· 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 1992 FLAMMABLE LIQUIDS, TOXIC, N.O.S. (METHANOL), 3 (6.1), II

15 Regulatory information

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

67-66-3 trichloromethane

· Section 313 (Specific toxic chemical listings):

67-56-1 methanol

75-27-4 bromodichloromethane

67-66-3 trichloromethane

75-25-2 bromoform

· TSCA (Toxic Substances Control Act):

All ingredients are listed.

· TSCA new (21st Century Act) (Substances not listed)

75-27-4 bromodichloromethane

· Proposition 65
· Chemicals known to cause cancer:

75-27-4 bromodichloromethane

67-66-3 trichloromethane

75-25-2 bromoform

· 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.

(Contd. on page 11)

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/04/2018

Reviewed on 06/04/2018

Trade name: THM-HM4C

(Contd. of page 10)

· Chemicals known to cause developmental toxicity:

67-56-1	methanol
67-66-3	trichloromethane

· Carcinogenic categories
· EPA (Environmental Protection Agency) (Substances not listed)

67-56-1	methanol
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· TLV (Threshold Limit Value established by ACGIH)

67-66-3	trichloromethane	A3
75-25-2	bromoform	A3

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

67-66-3	trichloromethane
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· 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
trichloromethane
bromoform

· Hazard statements

H225 Highly flammable liquid and vapor.
H331 Toxic if inhaled.
H351 Suspected of causing cancer.
H361 Suspected of damaging fertility or the unborn child.
H370 Causes damage to organs.

· Precautionary statements

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Do not breathe dust/fume/gas/mist/vapors/spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF exposed or concerned: Get medical advice/attention.
Specific treatment (see on this label).

(Contd. on page 12)

Safety Data Sheet
acc. to OSHA HCS

Printing date 06/04/2018

Reviewed on 06/04/2018

Trade name: THM-HM4C

(Contd. of page 11)

*In case of fire: Use for extinction: CO₂, powder or water spray.**Store in a well-ventilated place. Keep container tightly closed.**Store in a well-ventilated place. Keep cool.**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:** Environment protection department.**· **Contact:****High-Purity Standards**Tel: 843-767-7900**Fax: 843-767-7906**· **Date of preparation / last revision** 06/04/2018 / -**· **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 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, 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. 2: Carcinogenicity – Category 2**Repr. 2: Reproductive toxicity – Category 2**STOT SE 1: Specific target organ toxicity (single exposure) – Category 1*