Trimethyl Orthoformate (cas 149-73-5) MSDS

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifiers
Product name: Trimethyl orthoformate
Product Number: 305472
Brand: Anonymous
CAS-No.: 149-73-5

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses: Laboratory chemicals, Manufacture of substances

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]
Flammable liquids (Category 2)
Eye irritation (Category 2)

Classification according to EU Directives 67/548/EEC or 1999/45/EC
Highly flammable. Irritating to eyes.

2.2 Label elements
Labelling according Regulation (EC) No 1272/2008 [CLP]

Signal word: Danger
Hazard statement(s)
H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.
Precautionary statement(s)
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Supplemental Hazard Statements: none

R-phrase(s)
R11 Highly flammable.
R36 Irritating to eyes.
S-phrase(s)
S9 Keep container in a well-ventilated place.
S16 Keep away from sources of ignition - No smoking.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

2.3 Other hazards - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances
Synonyms: Trimethoxymethane
Formula: C4H10O3
Molecular Weight: 106,12 g/mol
Component Concentration
Trimethyl orthoformate CAS-No. 149-73-5
4. FIRST AID MEASURES
4.1 Description of first aid measures
   General advice
   Consult a physician. Show this safety data sheet to the doctor in attendance.
   If inhaled
   If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
   In case of skin contact
   Wash off with soap and plenty of water. Consult a physician.
   In case of eye contact
   Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
   If swallowed
   Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
4.2 Most important symptoms and effects, both acute and delayed
   To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
4.3 Indication of any immediate medical attention and special treatment needed
   No data available
5. FIREFIGHTING MEASURES
5.1 Extinguishing media
   Suitable extinguishing media
   For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.
5.2 Special hazards arising from the substance or mixture
   Carbon oxides
5.3 Advice for firefighters
   Wear self contained breathing apparatus for fire fighting if necessary.
5.4 Further information
   Use water spray to cool unopened containers.
6. ACCIDENTAL RELEASE MEASURES
6.1 Personal precautions, protective equipment and emergency procedures
   Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
6.2 Environmental precautions
   Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
6.3 Methods and materials for containment and cleaning up
   Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).
6.4 Reference to other sections
   For disposal see section 13.
7. HANDLING AND STORAGE
7.1 Precautions for safe handling
   Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
   Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.
7.2 Conditions for safe storage, including any incompatibilities
   Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
7.3 Specific end uses
   No data available
8. EXPOSURE CONTROLS/PERSOAL PROTECTION
8.1 Control parameters
   Components with workplace control parameters
8.2 Exposure controls
Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Body Protection
Impervious clothing. Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance Form: clear, liquid
b) Odour no data available
c) Odour Threshold no data available
d) pH no data available
e) Melting point/freezing point no data available
f) Initial boiling point and boiling range 101 - 102 °C - lit.
g) Flash point 13 °C - closed cup
h) Evaporation rate no data available
i) Flammability (solid, gas) no data available
j) Upper/lower flammability or explosive limits
   Upper explosion limit: 5,1 % (V)
   Lower explosion limit: 1,4 % (V)
k) Vapour pressure 76 hPa at 40 °C
                   53 hPa at 30 °C
l) Vapour density 3,66 - (Air = 1.0)
m) Relative density 0,97 g/cm3 at 25 °C
n) Water solubility no data available
o) Partition coefficient: n-octanol/water no data available
p) Autoignition temperature no data available
q) Decomposition temperature no data available
r) Viscosity no data available
s) Explosive properties no data available
t) Oxidizing properties no data available

9.2 Other safety information
no data available
10. **STABILITY AND REACTIVITY**

10.1 **Reactivity**
no data available

10.2 **Chemical stability**
no data available

10.3 **Possibility of hazardous reactions**
no data available

10.4 **Conditions to avoid**
Avoid moisture.
Heat, flames and sparks. Extremes of temperature and direct sunlight.

10.5 **Incompatible materials**
acids, Strong oxidizing agents

10.6 **Hazardous decomposition products**
Other decomposition products - no data available

11. **TOXICOLOGICAL INFORMATION**

11.1 **Information on toxicological effects**

**Acute toxicity**
no data available

**Skin corrosion/irritation**
Skin - rabbit - Mild skin irritation - 24 h

**Serious eye damage/eye irritation**
Eyes - rabbit - Moderate eye irritation - 24 h

**Respiratory or skin sensitization**
no data available

**Germ cell mutagenicity**
no data available

**Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**Reproductive toxicity**
no data available

**Specific target organ toxicity - single exposure**
no data available

**Specific target organ toxicity - repeated exposure**
no data available

**Aspiration hazard**
no data available

**Potential health effects**

- **Inhalation**
May be harmful if inhaled. May cause respiratory tract irritation.

- **Ingestion**
May be harmful if swallowed.

- **Skin**
May be harmful if absorbed through skin. May cause skin irritation.

- **Eyes**
Causes serious eye irritation.

**Signs and Symptoms of Exposure**
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**Additional Information**
RTECS: RM6650000

12. **ECOLOGICAL INFORMATION**

12.1 **Toxicity**
no data available

12.2 **Persistence and degradability**
no data available

12.3 **Bioaccumulative potential**
no data available

12.4 **Mobility in soil**
no data available

12.5 **Results of PBT and vPvB assessment**
no data available
12.6 Other adverse effects
no data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

14.1 UN number
ADR/RID: 3272     IMDG: 3272     IATA: 3272

14.2 UN proper shipping name
ADR/RID: ESTERS, N.O.S. (Trimethyl orthoformate)
IMDG: ESTERS, N.O.S. (Trimethyl orthoformate)
IATA: Esters, n.o.s. (Trimethyl orthoformate)

14.3 Transport hazard class(es)
ADR/RID: 3     IMDG: 3     IATA: 3

14.4 Packaging group
ADR/RID: II     IMDG: II     IATA: II

14.5 Environmental hazards
ADR/RID: no     IMDG Marine pollutant: no     IATA: no

14.6 Special precautions for user
no data available

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
no data available

15.2 Chemical Safety Assessment
no data available

16. OTHER INFORMATION

Further information
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information this document is based on the resent state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. guidechem shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.