

Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date 09.02.2008

Revision: 09.02.2008

1 Identification of substance**Product details****Trade name*****Thallium (I) malonate/formate (Clerici's solution)*****Stock number:**

89118

Manufacturer/Supplier:Alfa Aesar GmbH & Co.KG
Zeppelinstrasse 7
D-76185 Karlsruhe / GermanyE-mail: gcat@matthey.com
www.alfa-chemcat.com**Informing department:**Product safety department.
Product Safety Department
Giftnotruf Universität Mainz / Poison Information Center Mainz
www.giftinfo.uni-mainz.de Telefon: +49(0)6131/19240**Emergency information:****2 Hazards identification****Hazard designation:**T+ Very toxic
N Dangerous for the environment**Information pertaining to particular dangers for man and environment**R 26/28 Very toxic by inhalation and if swallowed.
R 33 Danger of cumulative effects.
R 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.**3 Composition/information on ingredients****Chemical characterization:****Designation: (CAS#)**

Thallium (I) malonate/formate (CAS# 61971-47-9): 100%

Identification number(s):**EC Number:**

081-002-00-9

4 First aid measures**General information**Instantly remove any clothing soiled by the product.
Remove breathing apparatus only after soiled clothing has been completely removed.
In case of irregular breathing or respiratory arrest provide artificial respiration.**After inhalation**

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

After skin contactSeek immediate medical advice.
Instantly wash with water and soap and rinse thoroughly.**After eye contact**Seek immediate medical advice.
Rinse opened eye for several minutes under running water. Then consult doctor.**After swallowing**Do not induce vomiting; instantly call for medical help.
Seek immediate medical advice.**5 Fire fighting measures****Suitable extinguishing agents**

Use carbon dioxide, extinguishing powder or foam. Water may be ineffective but may be used for cooling exposed containers.

Special hazards caused by the material, its products of combustion or flue gases:Can be released in case of fire:
Carbon monoxide and carbon dioxide
Toxic metal oxide smoke**Protective equipment:**Wear self-contained breathing apparatus.
Wear full protective suit.**6 Accidental release measures****Person-related safety precautions:**Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation**Measures for environmental protection:****Measures for cleaning/collecting:**Do not allow material to be released to the environment without proper governmental permits.
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose of contaminated material as waste according to item 13.**Additional information:**Ensure adequate ventilation.
See Section 7 for information on safe handling
See section 8 for information on personal protection equipment.
See Section 13 for information on disposal.**7 Handling and storage****Handling****Information for safe handling:**Keep containers tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation/exhaustion at the workplace.
Open and handle container with care.**Information about protection against explosions and fires:**

The product is not flammable

Storage Requirements to be met by storerooms and containers:

No special requirements.

Information about storage in one common storage facility:

Store away from oxidizing agents.

Further information about storage conditions:Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.
Store in a locked cabinet or with access restricted to technical experts or their assistants.**8 Exposure controls and personal protection****Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

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Components with critical values that require monitoring at the workplace:

Thallium and soluble thallium compounds (as Tl)
mg/m³

ACGIH TLV 0.1 (skin)
Austria MAK 0.1
Belgium TWA 0.1 (skin)
Denmark TWA 0.1 (skin)
Finland TWA 0.1 (skin)
France VME 0.1
Germany MAK 0.1
Ireland TWA 0.1 (skin)
Korea TLV 0.1 (skin)
Netherlands MAC-TGG 0.1 (skin)
Norway TWA 0.1
Poland TWA 0.1; 0.3-STEL
Switzerland MAK-WV 0.1 (skin)
United Kingdom LTEL 0.1 (skin)
USA PEL 0.1 (skin)
No data

Additional information:

Personal protective equipment

General protective and hygienic measures

The usual precautionary measures should be adhered to in handling the chemicals.

Keep away from foodstuffs, beverages and food.

Instantly remove any soiled and impregnated garments.

Wash hands during breaks and at the end of the work.

Store protective clothing separately.

Use breathing protection with high concentrations.

Check protective gloves prior to each use for their proper condition.

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.

Safety glasses

Breathing equipment:

Protection of hands:

Material of gloves

Eye protection:

Body protection:

Protective work clothing.

9 Physical and chemical properties:

General Information

Form: Liquid
Smell: Not determined

Change in condition

Melting point/Melting range: Not determined
Boiling point/Boiling range: Not determined
Sublimation temperature / start: Not determined

Flash point: Not determined

Ignition temperature: Not determined

Decomposition temperature: Not determined

Danger of explosion: Product is not explosive.

Critical values for explosion:

Lower: Not determined
Upper: Not determined

Steam pressure: Not determined

Density at 20°C 4.3 g/cm³

Solubility in / Miscibility with

Water: Fully miscible

10 Stability and reactivity

Thermal decomposition / conditions to be avoided:

No decomposition if used and stored according to specifications.

Materials to be avoided:

Oxidizing agents

Dangerous reactions:

No dangerous reactions known

Dangerous products of decomposition:

Carbon monoxide and carbon dioxide

Toxic metal oxide smoke

11 Toxicological information

Acute toxicity:

Primary irritant effect:

on the skin:

Irritant for skin and mucous membranes.

on the eye:

Irritant effect.

Sensitization:

No sensitizing effect known.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

12 Ecological information:

Ecotoxicological effects:

Remark:

Toxic for fish

General notes:

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

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

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

Also poisonous for fish and plankton in water bodies.

Do not allow material to be released to the environment without proper governmental permits.

Toxic for aquatic organisms

13 Disposal considerations

Product:

Recommendation

Consult state, local or national regulations for proper disposal.

Hand over to disposers of hazardous waste.

Must be specially treated under adherence to official regulations.

Uncleaned packagings:

Recommendation:

Disposal must be made according to official regulations.

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Recommended cleaning agent: Water, if necessary with cleaning agent.

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14 Transport information

Land transport ADR/RID and GGVS/GGVE (cross-border/domestic)



ADR/RID-GGVS/E Class: 6.1 (T5) Toxic substances.
 Kemler Number: 60
 UN-Number: 1707
 Packaging group: II
 Label: 6.1
 Designation of goods: 1707 THALLIUM COMPOUNDS, N.O.S. (Thallium (I) malonate/formate solution)
 Limited quantities (LQ): LQ18
 Transport category: 2
 Tunnel restriction code: E

Maritime transport IMDG/GGVSea:



IMDG/GGVSea Class: 6.1
 UN Number: 1707
 Label: 6.1
 Packaging group: II
 Correct technical name: THALLIUM COMPOUNDS, N.O.S.

Air transport ICAO-TI and IATA-DGR:



ICAO/IATA Class: 6.1
 UN/ID Number: 1707
 Label: 6.1
 Packaging group: II
 Correct technical name: THALLIUM COMPOUNDS, N.O.S.

15 Regulatory information

Designation according to EC guidelines:

Code letter and hazard designation of product:



T+ Very toxic
 N Dangerous for the environment

Risk phrases:

26/28 Very toxic by inhalation and if swallowed.
 33 Danger of cumulative effects.
 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases:

13 Keep away from food, drink and animal feedingstuffs.
 28 After contact with skin, wash immediately with plenty of water.
 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
 61 Avoid release to the environment. Refer to special instructions/safety data sheets.

National regulations

Information about limitation of use:

For use only by technically qualified individuals.
 Employment restrictions concerning young persons must be observed.

Water hazard class:

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

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing data specification

sheet:

Health, Safety and Environmental Department.

Contact:

Paul V. Connolly