

# Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date 14.07.2010

Revision: 14.07.2010

## 1 Identification of substance

### Product details

#### Trade name

**Gallium(III) perchlorate hydrate**

#### Stock number:

45580

#### Manufacturer/Supplier:

Alfa Aesar GmbH & Co.KG  
Benzstrasse 3  
D-76185 Karlsruhe / Germany

E-mail: gcat@matthey.com  
www.alfa-chemcat.com

#### Informing department:

Product safety department.

#### Emergency information:

Giftnotruf Universität Mainz / Poison Information Center Mainz  
www.giftinfo.uni-mainz.de Telefon: +49(0)6131/19240

## 2 Hazards identification

### Hazard designation:

  Xi Irritant  
O Oxidising

### Information pertaining to particular dangers for man and environment

R 8 Contact with combustible material may cause fire.  
R 36/37/38 Irritating to eyes, respiratory system and skin.

### GHS label elements

 **Danger**

H272 - May intensify fire; oxidiser.

 **Warning**

H315 - Causes skin irritation.  
H319 - Causes serious eye irritation.  
H335 - May cause respiratory irritation.  
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P221 Take any precaution to avoid mixing with combustibles.  
P302+P352 IF ON SKIN: Wash with plenty of soap and water.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

### Prevention:

### Response:

P405 Store locked up.

### Storage:

### Disposal:

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

## 3 Composition/information on ingredients

### Chemical characterization:

#### Designation: (CAS#)

Gallium(III) perchlorate hydrate (CAS# 81029-07-4)

## 4 First aid measures

### After inhalation

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

### After skin contact

Seek immediate medical advice.  
Instantly wash with water and soap and rinse thoroughly.

### After eye contact

Seek immediate medical advice.

### After swallowing

Rinse opened eye for several minutes under running water. Then consult doctor.  
Seek immediate medical advice.

## 5 Fire fighting measures

### Suitable extinguishing agents

CO2, sand, extinguishing powder. Do not use water.

### For safety reasons unsuitable extinguishing agents

Water.

### Special hazards caused by the material, its products of combustion or flue gases:

Can be released in case of fire:

Metal oxide

Hydrogen chloride (HCl)

This substance is an oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.

### 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.

### Measures for environmental protection:

Ensure adequate ventilation

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

### Measures for cleaning/collecting:

Ensure adequate ventilation.

### Additional information:

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.

### Information about protection against explosions and fires:

Substance/product can reduce the ignition temperature of flammable substances.  
This substance is an oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.

### Storage

#### Requirements to be met by storerooms and containers:

No special requirements.

#### Information about storage in one common storage facility:

Store away from flammable substances.  
Store away from reducing agents.  
Do not store with organic materials.  
Store away from metal powders.

### Further information about storage conditions:

Keep container tightly sealed.  
Store in cool, dry conditions in well sealed containers.

## 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.

(Contd. on page 2)  
GB

# Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date 14.07.2010

Revision: 14.07.2010

Trade name **Gallium(III) perchlorate hydrate**

(Contd. of page 1)

**Components with critical values that require monitoring at the workplace:**

Not required.  
No data

**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.  
Avoid contact with the eyes and skin.

**Breathing equipment:**

Use breathing protection with high concentrations.

**Protection of hands:**

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

**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.

**Penetration time of glove material**

Impervious gloves

**Eye protection:**

Not determined

**Body protection:**

Safety glasses  
Face protection  
Protective work clothing.

## 9 Physical and chemical properties:

### General Information

**Form:** Crystalline  
**Smell:** Not determined

### Change in condition

**Melting point/Melting range:** 175°C  
**Boiling point/Boiling range:** Not determined  
**Sublimation temperature / start:** Not determined

**Inflammability (solid, gaseous)** Contact with combustible material may cause fire.

**Ignition temperature:** Not determined

**Decomposition temperature:** Not determined

### Critical values for explosion:

**Lower:** Not determined  
**Upper:** Not determined

**Steam pressure:** Not determined

**Density** Not determined

## 10 Stability and reactivity

**Thermal decomposition / conditions to be avoided:**

No decomposition if used and stored according to specifications.

**Materials to be avoided:**

Reducing agents  
Metal powders  
Organic materials

**Dangerous reactions:**

Reacts with reducing agents

**Dangerous products of decomposition:**

Reacts with flammable substances  
Metal oxide  
Hydrogen chloride (HCl)

## 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:

**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 bodies or sewage system.  
Do not allow material to be released to the environment without proper governmental permits.

## 13 Disposal considerations

**Product:**

**Recommendation**

Hand over to disposers of hazardous waste.  
Must be specially treated under adherence to official regulations.  
Consult state, local or national regulations for proper disposal.

**Uncleaned packagings:**

**Recommendation:**

Disposal must be made according to official regulations.

## 14 Transport information

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



**ADR/RID-GGVS/E Class:**

5.1 (O2) Oxidising substances.

**Kemler Number:**

50

**UN-Number:**

1481

**Packaging group:**

II

**Label**

5.1

**Designation of goods:**

1481 PERCHLORATES, INORGANIC, N.O.S. (Gallium(III) perchlorate hydrate)

**Limited quantities (LQ)**

LQ11

**Transport category**

2

(Contd. on page 3)

# Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date 14.07.2010


Revision: 14.07.2010

Trade name **Gallium(III) perchlorate hydrate**

(Contd. of page 2)


Tunnel restriction code E

Maritime transport IMDG/GGVSea:



**IMDG/GGVSea Class:** 5.1  
**UN Number:** 1481  
**Label:** 5.1  
**Packaging group:** II  
**EMS Number:** F-H,S-Q  
**Marine pollutant:** No  
**Segregation groups:** Perchlorates  
**Correct technical name:** PERCHLORATES, INORGANIC, N.O.S. (Gallium(III) perchlorate hydrate)

Air transport ICAO-TI and IATA-DGR:



**ICAO/IATA Class:** 5.1  
**UN/ID Number:** 1481  
**Label:** 5.1  
**Packaging group:** II  
**Correct technical name:** PERCHLORATES, INORGANIC, N.O.S. (Gallium(III) perchlorate hydrate)

UN "Model Regulation": UN1481, PERCHLORATES, INORGANIC, N.O.S., 5.1, II

## 15 Regulatory information

Designation according to EC guidelines:

Code letter and hazard designation of product:



**Risk phrases:** 8 Contact with combustible material may cause fire.  
 36/37/38 Irritating to eyes, respiratory system and skin.

**Safety phrases:** 17 Keep away from combustible material.  
 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
 37 Wear suitable gloves.

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 hazard class 1 (Self-assessment): slightly 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:** Zachariah Holt

**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)  
 RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)  
 IMDG: International Maritime Code for Dangerous Goods  
 IATA: International Air Transport Association  
 IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)  
 ICAO: International Civil Aviation Organization  
 ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)  
 GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
 CAS: Chemical Abstracts Service (division of the American Chemical Society)