

# Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date 13.07.2010

Revision: 13.07.2010

## 1 Identification of substance

### Product details

Trade name

**Indium (III) perchlorate**

Stock number:

11642

Manufacturer/Supplier:

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

P405 Store locked up.

Response:

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

Storage:

Disposal:

## 3 Composition/information on ingredients

Chemical characterization:

Designation: (CAS#)

Indium (III) perchlorate, octahydrate (CAS# 13465-15-1);  
100%

Identification number(s):

EINECS Number:

236-874-7

## 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.  
Rinse opened eye for several minutes under running water. Then consult doctor.

After swallowing

Seek immediate medical advice.

## 5 Fire fighting measures

Suitable extinguishing agents

Use fire fighting measures that suit the environment.

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

This substance is an oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.  
Wear self-contained breathing apparatus.  
Wear full protective suit.

Protective equipment:

## 6 Accidental release measures

Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away.

Measures for environmental protection:

Ensure adequate ventilation

Measures for cleaning/collecting:

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

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.

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.  
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 flammable substances.  
Store away from reducing agents.

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.

Components with critical values that require monitoring at the workplace:

Indium and compounds  
mg/m3(Contd. on page 2)  
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ACGIH TLV 0.1(In)  
 Belgium TWA 0.1  
 Denmark TWA 0.1(In)  
 Finland TWA 0.1  
 Netherlands MAC-TGG 0.1  
 Norway TWA 0.1  
 Switzerland MAK-W 0.1  
 United Kingdom TWA 0.1(In); 0.3(In)-STEL  
 OSHA PEL TWA 0.1  
 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.  
 Avoid contact with the eyes and skin.  
 Use breathing protection with high concentrations.  
 Safety glasses  
 Face protection  
 Protective work clothing.

**Breathing equipment:****Eye protection:****Body protection:****9 Physical and chemical properties:****General Information**

**Form:** Crystalline  
**Colour:** Colourless  
**Smell:** Odourless

**Change in condition**

**Melting point/Melting range:** approx. 8 °C  
**Boiling point/Boiling range:** Not determined  
**Sublimation temperature / start:** Not determined

**Flash point:** Not applicable**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**Solubility in / Miscibility with****Water:** Soluble**10 Stability and reactivity****Thermal decomposition / conditions to be avoided:****Materials to be avoided:**

No decomposition if used and stored according to specifications.  
 Reducing agents, easily oxidized materials  
 Organic materials  
 Reacts with reducing agents  
 Reacts with flammable substances  
 Hydrogen chloride (HCl)  
 Phosgen

**Dangerous reactions:****Dangerous products of decomposition:****11 Toxicological information****Acute toxicity:****Primary irritant effect:****on the skin:****on the eye:****Sensitization:****Additional toxicological information:**

Irritant for skin and mucous membranes.  
 Irritant effect.  
 No sensitizing effect known.  
 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**

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:****Recommended cleaning agent:**

Disposal must be made according to official regulations.  
 Water, if necessary with cleaning agent.

**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

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**Packaging group:** II  
**Label:** 5.1  
**Designation of goods:** 1481 PERCHLORATES, INORGANIC, N.O.S. (Indium (III) perchlorate)  
**Limited quantities (LQ):** LQ11  
**Transport category:** 2  
**Tunnel restriction code:** E

Maritime transport IMDG/GGVSea:



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

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. (Indium (III) perchlorate)

**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:



Xi Irritant  
 O Oxidising

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

**Safety phrases:** 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

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  
 EINECS: European Inventory of Existing Commercial Chemical Substances  
 CAS: Chemical Abstracts Service (division of the American Chemical Society)