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 ***Titanium(III) chloride, 20% in 3% hydrochloric acid***

Stock number: 39743

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:

C Corrosive

Information pertaining to particular dangers for man and environment
R 34 Causes burns.

GHS label elements

Danger

H314 - Causes severe skin burns and eye damage.

Prevention:
P260 Do not breathe dust/fume/gas/mist/vapours/spray.

Response:
P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage:
P405 Store locked up.

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

3 Composition/information on ingredients

Chemical characterization:

Designation: (CAS#)
Titanium(III) chloride (CAS# 7705-07-9): 20-23%
Hydrogen chloride (CAS# 7647-01-0): 2-3%
Water (CAS# 7732-18-5): balance

4 First aid measures

General information
Instantly remove any clothing soiled by the product.

After inhalation
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
Seek immediate medical advice.

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

After eye contact
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:
Can be released in case of fire:
Hydrogen chloride (HCl)
Metal oxide

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

Measures for cleaning/collecting:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Use neutralizing agent.
Dispose of contaminated material as waste according to item 13.
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:
Handle under dry protective gas.
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:
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 strong bases.
Store away from metals.
Store away from air.
Aqueous solutions are incompatible with alkali and alkaline earth metals and many reactive organic and inorganic chemicals.

Further information about storage conditions:
Store in nitrogen.
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.
This product is air sensitive.

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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:

Additional information: 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.

Eye protection:
Face protection
Safety glasses
Tightly sealed safety glasses.
Full face protection

Body protection: Protective work clothing.

9 Physical and chemical properties:

General Information	
Form:	Liquid
Colour:	Purple
Smell:	Acidic
Change in condition	
Melting point/Melting range:	Not determined
Boiling point/Boiling range:	Not determined
Sublimation temperature / start:	Not determined
Flash point:	Not applicable
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	1.22 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:
Bases
Alkali metals
Alkaline earth metals
Aqueous solutions are incompatible with alkali and alkaline earth metals and many reactive organic and inorganic chemicals.
Air

Dangerous reactions:
Reacts with metals forming hydrogen
Corrosive action on metals

Dangerous products of decomposition:
Hydrogen chloride (HCl)
Metal oxide

11 Toxicological information

Acute toxicity:

Primary irritant effect:

on the skin: Corrosive effect on skin and mucous membranes.

on the eye: Strong corrosive 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.
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.
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.

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:	8 (C1) Corrosive substances.
Kemler Number:	80
UN-Number:	3264
Packaging group:	II
Label	8
Designation of goods:	3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Titanium(III) chloride/Hydrochloric acid solution)
Limited quantities (LQ)	LQ22
Transport category	2
Tunnel restriction code	E

Maritime transport IMDG/GGVSea:

IMDG/GGVSea Class:	8
UN Number:	3264
Label	8
Packaging group:	II
EMS Number:	F-A,S-B
Marine pollutant:	No
Segregation groups	Acids
Correct technical name:	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Titanium(III) chloride/Hydrochloric acid solution)

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class:	8
UN/ID Number:	3264
Label	8
Packaging group:	II
Correct technical name:	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Titanium(III) chloride/Hydrochloric acid solution)

UN "Model Regulation": UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S., 8, II

15 Regulatory information

Designation according to EC guidelines:

Code letter and hazard designation of product:

C Corrosive

Risk phrases: 34 Causes burns.

Safety phrases:
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

National regulations

Information about limitation of use: Employment restrictions concerning young persons must be observed.
For use only by technically qualified individuals.

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)