

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 01.07.2013

Revision: 14.05.2010

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Trade name

Bismuth titanium isopropoxide, 5% w/v inisopropanol

Stock number:

42840

CAS Number:

338391-61-0

1.2 Relevant identified uses of the substance or mixture and uses advised against.

Identified use:

SU24 Scientific research and development

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Alfa Aesar GmbH & Co.KG
 A Johnson Matthey Company
 Zeppelinstr. 7b
 76185 Karlsruhe / Germany
 Tel: +49 (0) 721 84007 280
 Fax: +49 (0) 721 84007 300
 Email: tech@alfa.com
 www.alfa.com
 Product safety Tel + +049 (0) 7275 988687-0
 Carechem 24: +44 (0) 1235 239 670 (Multi-language emergency number)
 Poison Information Center Mainz
 www.giftinfo.uni-mainz.de Telephone: +49(0)6131/19240

Informing department:

1.4 Emergency telephone number:

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture**

Classification according to Regulation (EC) No 1272/2008



GHS02 flame

Flam. Liq. 2 H225 Highly flammable liquid and vapour.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

STOT SE 3 H336 May cause drowsiness or dizziness.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

Xi; Irritant

R36/38: Irritating to eyes and skin.



F; Highly flammable

R11: Highly flammable.

R67: Vapours may cause drowsiness and dizziness.

Information concerning particular hazards

for human and environment:

Has a narcotizing effect.

Other hazards that do not result in

classification

No information known.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

Hazard pictograms

Signal word

Hazard statements

The substance is classified and labelled according to the CLP regulation.

GHS02, GHS07

Danger

H225 Highly flammable liquid and vapour.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

P210

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P280

Wear protective gloves.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if

present and easy to do. Continue rinsing.

Precautionary statements**2.3 Other hazards**

Results of PBT and vPvB assessment

PBT:

Not applicable.

vPvB:

Not applicable.

SECTION 3: Composition/information on ingredients**3.1 Substances**

CAS# Designation:

338391-61-0 Bismuth titanium isopropoxide, 5% w/v inisopropanol

SECTION 4: First aid measures**4.1 Description of first aid measures**

After inhalation

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

Seek immediate medical advice.

Instantly wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

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

Seek medical treatment.

After skin contact

After eye contact

After swallowing

4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

SECTION 5: Firefighting measures**5.1 Extinguishing media**

Suitable extinguishing agents

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

5.2 Special hazards arising from the substance or mixture

If this product is involved in a fire, the following can be released:

Carbon monoxide and carbon dioxide

Metal oxide

5.3 Advice for firefighters

Protective equipment:

Wear self-contained breathing apparatus.

Wear full protective suit.

DE/E

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Trade name **Bismuth titanium isopropoxide, 5% w/v in isopropanol**

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SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation

Keep away from ignition sources

6.2 Environmental precautions:

Do not allow material to be released to the environment without proper governmental permits.
Do not allow product to reach sewage system or water bodies.
Do not allow to enter the ground/soil.

6.3 Methods and material for containment and cleaning up:

Keep away from ignition sources.
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Ensure adequate ventilation.

Prevention of secondary hazards:

Keep away from ignition sources.

6.4 Reference to other sections

See Section 7 for information on safe handling
See section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

SECTION 7: Handling and storage**7.1 Precautions 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:

Protect against electrostatic charges.
Fumes can combine with air to form an explosive mixture.

7.2 Conditions for safe storage, including any incompatibilities

Storage
Requirements to be met by storerooms and containers:
Information about storage in one common storage facility:

Store in cool location.

Store away from oxidizing agents.
Store away from water.

Further information about storage conditions:

Store under dry inert gas.
This product is moisture sensitive.
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.
Protect from humidity and keep away from water.
No further relevant information available.

7.3 Specific end use(s)**SECTION 8: Exposure controls/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.

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

Isopropyl alcohol (2-Propanol)
ppm

ACGIH TLV	400; 500-STEL
Austria MAK	400
Belgium TWA	400; 500-STEL
Denmark TWA	200
France VLE	400
Germany MAK	400
Ireland TWA	400; 500-STEL (skin)
Japan TWA	400-STEL
Korea TWA	400; 500-STEL
Netherlands MAC-TGG	400 (skin)
Norway TWA	100
Poland TWA	900; 1200-STEL
Russia TWA	400-STEL
Sweden NGV	150; 250-STEL
Switzerland MAK-W	400
United Kingdom TWA	400; 500-STEL
OSHA PEL	400
No data	

Additional information:**8.2 Exposure controls****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.

Maintain an ergonomically appropriate working environment.

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.

Impervious gloves

Not determined

Safety glasses

Face protection

Protective work clothing.

Breathing equipment:**Protection of hands:****Material of gloves****Penetration time of glove material****Eye protection:****Body protection:****SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties****General Information****Appearance:****Form:**

Liquid

Smell:

Alcohol-like

Odour threshold:

Not determined.

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Trade name Bismuth titanium isopropoxide, 5% w/v in isopropanol	
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pH-value:	Not determined.
Change in condition Melting point/Melting range: Boiling point/Boiling range: Sublimation temperature / start:	Not determined Not determined Not determined Not determined
Flash point: Inflammability (solid, gaseous) Ignition temperature: Decomposition temperature: Self-inflammability: Critical values for explosion: Lower: Upper: Steam pressure: Density Relative density Vapour density Evaporation rate Solubility in / Miscibility with Water: Partition coefficient (n-octanol/water): Viscosity: dynamic: kinematic:	12 °C (isopropanol) Not determined. Not determined Not determined Not determined. Not determined. Not determined Not determined. Not determined. Not determined. Not determined. Not determined. Decomposes Not determined. Not determined. Not determined. Not determined. Not determined. Not determined. Not determined. Not determined.
9.2 Other information	No further relevant information available.
SECTION 10: Stability and reactivity	
10.1 Reactivity	No information known.
10.2 Chemical stability	Stable under recommended storage conditions.
Thermal decomposition / conditions to be avoided:	No decomposition if used and stored according to specifications.
10.3 Possibility of hazardous reactions	No dangerous reactions known
10.5 Incompatible materials:	Oxidizing agents Water/moisture
10.6 Hazardous decomposition products:	Carbon monoxide and carbon dioxide Metal oxide
SECTION 11: Toxicological information	
11.1 Information on toxicological effects Acute toxicity: LD/LC50 values that are relevant for classification: Skin irritation or corrosion: Eye irritation or corrosion: Sensitization: Germ cell mutagenicity: Carcinogenicity:	No effects known. No data Causes skin irritation. Causes serious eye irritation. No sensitizing effect known. No effects known. IARC-3: Not classifiable as to carcinogenicity to humans. ACGIH A4: Not classifiable as a human carcinogen: Inadequate data on which to classify the agent in terms of its carcinogenicity in humans and/or animals.
Reproductive toxicity: Specific target organ system toxicity - repeated exposure: Specific target organ system toxicity - single exposure: Aspiration hazard: Additional toxicological information:	No effects known. No effects known. May cause drowsiness or dizziness. No effects known. To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.
SECTION 12: Ecological information	
12.1 Toxicity Aquatic toxicity: 12.2 Persistence and degradability 12.3 Bioaccumulative potential 12.4 Mobility in soil Additional ecological information: General notes:	No further relevant information available. No further relevant information available. No further relevant information available. No further relevant information available. Do not allow material to be released to the environment without proper governmental permits. 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. Avoid transfer into the environment.
12.5 Results of PBT and vPvB assessment PBT: vPvB: 12.6 Other adverse effects	Not applicable. Not applicable. No further relevant information available.
SECTION 13: Disposal considerations	
13.1 Waste treatment methods 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.
SECTION 14: Transport information	
UN-Number ADR, IMDG, IATA	UN1219
14.2 UN proper shipping name ADR IMDG, IATA	1219 ISOPROPANOL (ISOPROPYL ALCOHOL) ISOPROPANOL (ISOPROPYL ALCOHOL)
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14.3 Transport hazard class(es)

ADR

Class
Label
IMDG, IATA

3 (F1) Flammable liquids.

3

Class
Label

3 Flammable liquids.

3

Packing group
ADR, IMDG, IATA

II

14.5 Environmental hazards:

Not applicable.

14.6 Special precautions for userKemler Number:
EMS Number:

Warning: Flammable liquids.

30

F-E,S-D

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

Transport/Additional information:

ADR

Excepted quantities (EQ):

E2

Limited quantities (LQ)

1L

Transport category

2

Tunnel restriction code

D/E

UN "Model Regulation":

UN1219, ISOPROPANOL (ISOPROPYL ALCOHOL), 3, II

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**Australian Inventory of Chemical
Substances

Substance is not listed.

Standard for the Uniform Scheduling of
Drugs and Poisons

Substance is not listed.

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.

Other regulations, limitations and prohibitive
regulations
ELINCS (European List of Notified Chemical
Substances)

Substance is not listed.

Substances of very high concern (SVHC)
according to REACH, Article 57

Substance is not listed.

REACH - Pre-registered substances

Substance is not listed.

15.2 Chemical safety assessment:

A Chemical Safety Assessment has not been carried out.

SECTION 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.

Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 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)
 ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 IMDG: International Maritime Code for Dangerous Goods
 IATA: International Air Transport Association
 GHS: Globally Harmonized System of Classification and Labelling of Chemicals
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent

DE/E