

Safety Data Sheet
according to 1907/2006/EC, Article 31

Revision: 06.08.2010

Printing date 06.08.2010

1 Identification of substance**Product details**

Trade name

(S)-(+)-4-Penten-2-ol

Stock number:

B25728

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:

void

Information pertaining to particular dangers

R 10 Flammable.

GHS label elements

**Warning**

H226 - Flammable liquid and vapour.

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P240 Ground/bond container and receiving equipment.

P241 Use explosion-proof electrical/ventilating/lighting/equipment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

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

Prevention:

Response:

Disposal:

3 Composition/information on ingredients

Chemical characterization:

Designation: (CAS#)

(S)-(+)-4-Penten-2-ol (CAS# 55563-79-6): 100%

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

CO₂, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

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
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

Keep away from ignition sources

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).
Keep away from ignition sources.

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:

Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
Fumes can combine with air to form an explosive mixture.

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.**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:

Not required.

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.
Use breathing protection with high concentrations.
Check protective gloves prior to each use for their proper condition.

Breathing equipment:

Protection of hands:

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| | | |
|---|---|--------------------|
| 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. | (Contd. of page 1) |
| Penetration time of glove material | Impervious gloves | |
| Eye protection: | Not determined | |
| | Safety glasses | |
| | Face protection | |
| Body protection: | Protective work clothing. | |

9 Physical and chemical properties:

| | | |
|---|-------------------------|--|
| General Information | | |
| Form: | Liquid | |
| Colour: | Colourless | |
| Smell: | Not determined | |
| Change in condition | | |
| Melting point/Melting range: | Not determined | |
| Boiling point/Boiling range: | 115-116°C | |
| Sublimation temperature / start: | Not determined | |
| Flash point: | 30°C | |
| Ignition temperature: | Not determined | |
| Decomposition temperature: | Not determined | |
| Critical values for explosion: | | |
| Lower: | Not determined | |
| Upper: | Not determined | |
| Steam pressure: | Not determined | |
| Density at 20°C | 0.837 g/cm ³ | |

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 |

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 | 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 packaging: | |
| 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: | 3 (F1) Flammable liquids. |
| Kemler Number: | 30 |
| UN-Number: | 1987 |
| Packaging group: | III |
| Label | 3 |
| Designation of goods: | 1987 ALCOHOLS, N.O.S. ((S)-(+)-4-Penten-2-ol) |
| Tunnel restriction code | D/E |
| Maritime transport IMDG/GGVSea: | |
|  | |
| IMDG/GGVSea Class: | 3 |
| UN Number: | 1987 |
| Label | 3 |
| Packaging group: | III |
| Marine pollutant: | No |
| Correct technical name: | ALCOHOLS, N.O.S. ((S)-(+)-4-Penten-2-ol) |

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Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: 3
 UN/ID Number: 1987
 Label: 3
 Packaging group: III
 Correct technical name: ALCOHOLS, N.O.S. ((S)-(+)-4-Penten-2-ol)

UN "Model Regulation": UN1987, ALCOHOLS, N.O.S., 3, III

15 Regulatory information

Designation according to EC guidelines:
Risk phrases: 10 Flammable.
National regulations
Information about limitation of use: 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)

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