

Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date 22.07.2010

Revision: 22.07.2010

1 Identification of substance

Product details

Trade name

1,3-Cyclohexadiene

Stock number:

A19394, L09666

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
F Highly flammable

Information pertaining to particular dangers for man and environment

R 11 Highly flammable.
R 37 Irritating to respiratory system.

GHS label elements

**Danger**

H225 - Highly flammable liquid and vapour.

**Warning**

H335 - May cause respiratory irritation.

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

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

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

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

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:

1,3-Cyclohexadiene (CAS# 592-57-4); 100%

Designation: (CAS#)

Identification number(s):

209-764-1

EINECS Number:

Stabilized with:

BHT (butylated hydroxytoluene) (CAS# 128-37-0)

Additional information:

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:

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.

Ensure adequate ventilation

Keep away from ignition sources

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).

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents

Keep away from ignition sources.

See Section 7 for information on safe handling

See section 8 for information on personal protection equipment.

See Section 13 for information on disposal.

Additional information:

7 Handling and storage

Handling

Information for safe handling:

Keep containers tightly sealed.

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:

Refrigerate

Information about storage in one common storage facility:

Do not store together with oxidizing and acidic materials.
Protect from heat.

Further information about storage conditions:

Keep container tightly sealed.

Refrigerate

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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:	Not required.
Additional information:	No data
Personal protective equipment	The usual precautionary measures should be adhered to in handling the chemicals.
General protective and hygienic measures	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.
Breathing equipment:	Safety glasses
Eye protection:	Face protection
Body protection:	Protective work clothing.

9 Physical and chemical properties:

General Information	
Form:	Liquid
Colour:	Colourless
Smell:	Unpleasant
Change in condition	
Melting point/Melting range:	-98°C
Boiling point/Boiling range:	79-81°C
Sublimation temperature / start:	Not determined
Flash point:	-6°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	0.847 g/cm³
Solubility in / Miscibility with Water:	Not miscible or difficult to mix

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 Heat Acids
Dangerous reactions:	No dangerous reactions known
Dangerous products of decomposition:	Carbon monoxide and carbon dioxide

11 Toxicological information

Acute toxicity:	
LD/LC50 values that are relevant for classification:	
Inhalative LC50/2H	45000 mg/m3/2H (mouse)
Primary irritant effect:	
on the skin:	May cause irritation Irritant for skin and mucous membranes.
on the eye:	May cause irritation
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:	Generally not hazardous for water. 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:	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:	33
UN-Number:	3295
Packaging group:	II
Label	3
Designation of goods:	3295 HYDROCARBONS, LIQUID, N.O.S. (vapor pressure at 50°C at most 110 kPa)

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Limited quantities (LQ) LQ4
 Transport category 2
 Tunnel restriction code D/E

Maritime transport IMDG/GGVSea:



IMDG/GGVSea Class: 3
 UN Number: 3295
 Label: 3
 Packaging group: II
 EMS Number: F-E, S-D
 Marine pollutant: No
 Correct technical name: HYDROCARBONS, LIQUID, N.O.S.

Air transport ICAO-TI and IATA-DGR:



ICAO/IATA Class: 3
 UN/ID Number: 3295
 Label: 3
 Packaging group: II
 Correct technical name: HYDROCARBONS, LIQUID, N.O.S.

UN "Model Regulation":
 UN3295, HYDROCARBONS, LIQUID, N.O.S., 3, II

15 Regulatory information

Designation according to EC guidelines:

Code letter and hazard designation of product:



Xi Irritant
 F Highly flammable

Risk phrases:
 11 Highly flammable.
 37 Irritating to respiratory system.

Safety phrases:
 9 Keep container in a well-ventilated place.
 16 Keep away from sources of ignition - No smoking.
 29 Do not empty into drains.
 33 Take precautionary measures against static discharges.

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:
 Generally not 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)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent