

Safety data sheet

according to 1907/2006/EC, Article 31

Revision: 01.03.2011

Printing date 02.07.2013

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

Trade name

1,3-Dichloro-2-butene, cis + trans

Stock number:

L20334

CAS Number:

926-57-8

EC number:

213-138-3

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. 3 H226 Flammable liquid and vapour.



GHS09 environment

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H332 Harmful if inhaled.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

STOT SE 3 H335 May cause respiratory irritation.

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

Xn; Harmful

R20/22: Harmful by inhalation and if swallowed.

Xi; Irritant

R36/37/38: Irritating to eyes, respiratory system and skin.

N; Dangerous for the environment

R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R10: Flammable.

Information concerning particular hazards for human and environment:

Not applicable

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, GHS09

Warning

H226 Flammable liquid and vapour.

H302 Harmful if swallowed.

H332 Harmful if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H411 Toxic to aquatic life with long lasting effects.

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

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

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.

P405 Store locked up.

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

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:

926-57-8 1,3-Dichloro-2-butene, cis + trans

Identification number(s):

213-138-3

EC number:

Stabilised with:

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

Impurities and stabilising additives:

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.

(Contd. on page 2)
DE/E

Safety data sheet
according to 1907/2006/EC, Article 31

Revision: 01.03.2011

Printing date 02.07.2013

Trade name **1,3-Dichloro-2-butene, cis + trans**

(Contd. of page 1)

After skin contact

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.

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

Hydrogen chloride (HCl)

5.3 Advice for firefighters**Protective equipment:**

Wear self-contained breathing apparatus.

Wear full protective suit.

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).

Dispose of contaminated material as waste according to item 13.

Ensure adequate ventilation.

Keep away from ignition sources.

Prevention of secondary hazards:**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**

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:**

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.

7.3 Specific end use(s)

No further relevant information available.

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:**

Not required.

Additional information:

No data

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.

Breathing equipment:

Use breathing protection with high concentrations.

Protection of hands:

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.

Material of gloves

Impervious gloves

Penetration time of glove material

Not determined

Eye protection:

Safety glasses

Face protection

Body protection:

Protective work clothing.

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties****General Information****Appearance:****Form:**

Liquid

Colour:

Colourless

Smell:

Not determined

Odour threshold:

Not determined.

pH-value:

Not determined.

(Contd. on page 3)

DE/E

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 02.07.2013

Revision: 01.03.2011

Trade name **1,3-Dichloro-2-butene, cis + trans**

(Contd. of page 2)

Change in condition	
Melting point/Melting range:	Not determined
Boiling point/Boiling range:	125-129 °C
Sublimation temperature / start:	Not determined
Flash point:	33 °C
Inflammability (solid, gaseous)	Not applicable.
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Self-inflammability:	Not determined.
Critical values for explosion:	
Lower:	Not determined
Upper:	Not determined
Steam pressure:	Not determined
Density at 20 °C	1,161 g/cm ³
Relative density	Not determined.
Vapour density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with	
Water:	Not miscible or difficult to mix
Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	
dynamic:	Not determined.
kinematic:	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
10.6 Hazardous decomposition products:	Carbon monoxide and carbon dioxide Hydrogen chloride (HCl)

SECTION 11: Toxicological information

11.1 Information on toxicological effects	
Acute toxicity:	Harmful if inhaled. Harmful if swallowed.
LD/LC50 values that are relevant for classification:	No data
Skin irritation or corrosion:	Causes skin irritation.
Eye irritation or corrosion:	Causes serious eye irritation.
Sensitization:	No sensitizing effect known.
Germ cell mutagenicity:	No effects known.
Carcinogenicity:	No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.
Reproductive toxicity:	No effects known.
Specific target organ system toxicity - repeated exposure:	No effects known.
Specific target organ system toxicity - single exposure:	May cause respiratory irritation.
Aspiration hazard:	No effects known.
Additional toxicological information:	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:	No further relevant information available.
12.2 Persistence and degradability	No further relevant information available.
12.3 Bioaccumulative potential	No further relevant information available.
12.4 Mobility in soil	No further relevant information available.
Ecotoxic effects:	
Remark:	Toxic for fish
Additional ecological information:	
General notes:	Do not allow product to reach ground water, water bodies or sewage system. Do not allow material to be released to the environment without proper governmental permits. Toxic for aquatic organisms Water hazard class 2 (Self-assessment): hazardous for water. Danger to drinking water if even small quantities leak into soil. Also poisonous for fish and plankton in water bodies. Toxic to aquatic life. May cause long lasting harmful effects to aquatic life. Avoid transfer into the environment.
12.5 Results of PBT and vPvB assessment	
PBT:	Not applicable.
vPvB:	Not applicable.
12.6 Other adverse effects	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	UN1992
14.2 UN proper shipping name	
ADR	1992 FLAMMABLE LIQUID, TOXIC, N.O.S. (1,3-Dichloro-2-butene, cis + trans)

(Contd. on page 4)
DE/E





Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 02.07.2013

Revision: 01.03.2011

Trade name **1,3-Dichloro-2-butene, cis + trans**

(Contd. of page 3)

IMDG, IATA	FLAMMABLE LIQUID, TOXIC, N.O.S. (1,3-Dichloro-2-butene, cis + trans)
14.3 Transport hazard class(es)	
ADR	
	
	
Class Label	3 (FT1) Flammable liquids.
IMDG, IATA	3+6.1
	
	
Class Label	3 Flammable liquids.
Packing group	3+6.1
ADR, IMDG, IATA	III
14.5 Environmental hazards:	Environmentally hazardous substance, liquid
14.6 Special precautions for user	Warning: Flammable liquids.
Kemler Number:	36
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):	E1
Limited quantities (LQ)	5L
Transport category	3
Tunnel restriction code	D/E
UN "Model Regulation":	UN1992, FLAMMABLE LIQUID, TOXIC, N.O.S. (1,3-Dichloro-2-butene, cis + trans), 3 (6.1), III

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:

Employment restrictions concerning young persons must be observed.
For use only by technically qualified individuals.

Water hazard class:

Water hazard class 2 (Self-assessment): 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 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
 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

DE/E