

1 Identification

Product identifier

Product name: 2-Chloro-1,3-butadiene, 50% in xylene

Stock number: 19754

CAS Number:

126-99-8

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

Identified use: SU24 Scientific research and development

Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Alfa Aesar

Thermo Fisher Scientific Chemicals, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Tel: 800-343-0660

Fax: 800-322-4757

Email: tech@alfa.com

www.alfa.com

Information Department: Health, Safety and Environmental Department

Emergency telephone number:

During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

2 Hazard(s) identification

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)



GHS02 Flame

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



GHS06 Skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.

Acute Tox. 3 H311 Toxic in contact with skin.



GHS07

Acute Tox. 4 H332 Harmful if inhaled.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye irritation.

Hazards not otherwise classified No information known.

Label elements

GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

Hazard pictograms



GHS02 GHS06

Signal word

Danger

Hazard statements

H225 Highly flammable liquid and vapor.

H301+H311 Toxic if swallowed or in contact with skin.

H332 Harmful if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

Precautionary statements

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

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor/...

P303+P361+P353 If on skin (or hair): 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.

P361 Take off immediately all contaminated clothing.

P405 Store locked up.

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

WHMIS classification

B2 - Flammable liquid

D2A - Very toxic material causing other toxic effects



Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH 2 Health (acute effects) = 2

FIRE 3 Flammability = 3

REACTIVITY 1 Physical Hazard = 1

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

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3 Composition/information on ingredients

Chemical characterization: Substances
CAS# Description:
126-99-8 2-Chloro-1,3-butadiene, 50% in xylene

4 First-aid measures

Description of first aid measures
After inhalation
Supply fresh air. If required, provide artificial respiration. Keep patient warm.
Seek immediate medical advice.
After skin contact
Immediately 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 a doctor.
After swallowing Seek medical treatment.
Information for doctor
Most important symptoms and effects, both acute and delayed No further relevant information available.
Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

Extinguishing media
Suitable extinguishing agents CO2, sand, extinguishing powder. Do not use water.
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)
Advice for firefighters
Protective equipment:
Wear self-contained respirator.
Wear fully protective impervious suit.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Keep away from ignition sources
Environmental precautions: Do not allow material to be released to the environment without proper governmental permits.
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 section 13.
Ensure adequate ventilation.
Prevention of secondary hazards: Keep away from ignition sources.
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 disposal information.

7 Handling and storage

Handling
Precautions for safe handling
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation at the workplace.
Information about protection against explosions and fires:
Protect against electrostatic charges.
Fumes can combine with air to form an explosive mixture.
Keep ignition sources away.
Conditions for safe storage, including any incompatibilities
Storage
Requirements to be met by storerooms and receptacles: Store in a cool location.
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.
Specific end use(s) No further relevant information available.

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.
Control parameters
Components with limit values that require monitoring at the workplace:

2-Chloro-1,3-butadiene (beta-chloroprene)
ppm
ACGIH TLV 10 (skin)
Austria MAK 10
Belgium TWA 10 (skin)
Denmark TWA 1 (skin)
Finland TWA 10; 20-STEEL (skin)
France VME 10
Germany MAK 5 (skin)
Hungary TWA 10 mg/m3, 30 mg/m3-STEEL
Korea TLV 10 (skin)
Netherlands MAC-TGG 10 (skin)
Norway TWA 1
Poland TWA 2 mg/m3; 16 mg/m3-STEEL
Russia 0.05 mg/m3-STEEL
Sweden NGV 10; 15-KTV (skin)
Switzerland MAK-W 10; 20-KZG-W (skin)

(Contd. on page 3)
USA

Product name: 2-Chloro-1,3-butadiene, 50% in xylene

United Kingdom TWA 10 (skin) USA PEL 25 (skin)	(Contd. of page 2)
Xylene (mixture of isomers)	
ACGIH TLV ppm 100; 150-STEEL Not classifiable as a human carcinogen	
Austria MAK 100	
Denmark TWA 35 (skin)	
Finland TWA 100; 150-STEEL (skin)	
France VME 100; 150-VLE	
Germany MAK 100	
Hungary TWA 100 mg/m3; 300 mg/m3-STEEL	
Japan OEL 100	
Korea TLV 100; 150-STEEL	
Netherlands MAC-TGG 50 (skin)	
Norway TWA 25	
Poland TWA 100 mg/m3; 350 mg/m3-STEEL	
Sweden NGV 50; 100-STEEL (skin)	
Switzerland MAK-W 100; 200-KZG-W	
United Kingdom TWA 100; 150-STEEL (skin)	
USA PEL 100	

126-99-8 2-Chloro-1,3-butadiene, 50% in xylene (100.0%)	
PEL (USA)	Long-term value: 90 mg/m³, 25 ppm Skin
REL (USA)	Ceiling limit value: 3.6* mg/m³, 1* ppm *15-min; See Pocket Guide App. A
TLV (USA)	Long-term value: 36 mg/m³, 10 ppm Skin
EL (Canada)	Long-term value: 10 ppm Skin; IARC 2B; R
EV (Canada)	Long-term value: 36 mg/m³, 10 ppm Skin

Additional information: No data	
Exposure controls	
Personal protective equipment	
General protective and hygienic measures	
The usual precautionary measures for handling chemicals should be followed.	
Keep away from foodstuffs, beverages and feed.	
Remove all soiled and contaminated clothing immediately.	
Wash hands before breaks and at the end of work.	
Avoid contact with the eyes and skin.	
Maintain an ergonomically appropriate working environment.	
Breathing equipment: Use suitable respirator when high concentrations are present.	
Protection of hands:	
Impervious gloves	
Check protective gloves prior to each use for their proper condition.	
The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.	
Penetration time of glove material (in minutes) Not determined	
Eye protection: Safety glasses	
Body protection: Protective work clothing.	

9 Physical and chemical properties	
Information on basic physical and chemical properties	
General Information	
Appearance:	
Form:	Solution
Color:	Light brown
Odor:	Not determined
Odor threshold:	Not determined.
pH-value:	
Not determined.	
Change in condition	
Melting point/Melting range:	Not determined
Boiling point/Boiling range:	59.4 °C (139 °F)
Sublimation temperature / start:	Not determined
Flash point:	
-20 °C (-4 °F)	
Flammability (solid, gaseous)	
Not determined.	
Ignition temperature:	
Not determined	
Decomposition temperature:	
Not determined.	
Auto igniting:	
Not determined.	
Danger of explosion:	
Product is not explosive. However, formation of explosive air/vapor mixtures is possible.	
Explosion limits:	
Lower:	Not determined
Upper:	Not determined
Vapor pressure:	
Not determined	
Density at 20 °C (68 °F):	
0.9525 g/cm³ (7.949 lbs/gal)	
Relative density	
Not determined.	
Vapor 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.
Other information	
No further relevant information available.	

Product name: 2-Chloro-1,3-butadiene, 50% in xylene

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10 Stability and reactivity

Reactivity No information known.
Chemical stability Stable under recommended storage conditions.
Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications.
Possibility of hazardous reactions No dangerous reactions known
Conditions to avoid No further relevant information available.
Incompatible materials:
Oxidizing agents
Bases
Hazardous decomposition products:
Carbon monoxide and carbon dioxide
Hydrogen chloride (HCl)

11 Toxicological information

Information on toxicological effects
Acute toxicity:
Harmful if inhaled.
Toxic in contact with skin.
Toxic if swallowed.
Danger through skin absorption.
LD/LC50 values that are relevant for classification:
Xylenes (mixed isomers)

Oral: LD50: 4300 mg/kg (mam)
LD50: 4300 mg/kg (rat)
LDLo: 50 mg/kg (hmn)
Dermal: LD50: >1700 mg/kg (rbt)
Inhalative: LC50/4H: 5000 ppm/4H (rbt)
Irritation of eyes: moderate: 500 mg/24H (rbt)
severe: 5000 µg/24H (rbt)
Skin irritation or corrosion: Causes skin irritation.
Eye irritation or corrosion: Causes serious eye irritation.
Sensitization: No sensitizing effects known.
Germ cell mutagenicity: No effects known.
Carcinogenicity:
EPA-D: Not classifiable as to human carcinogenicity: inadequate human and animal evidence of carcinogenicity or no data are available.
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.
The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for this substance.
Reproductive toxicity: No effects known.
Specific target organ system toxicity - repeated exposure: No effects known.
Specific target organ system toxicity - single exposure: No effects known.
Aspiration hazard: No effects known.
Subacute to chronic toxicity:
Xylenes are irritating to the skin. May be narcotic in high concentrations. Reproductive effects in laboratory animals have been reported. May damage liver, kidneys and blood.
2-Chloro-1,3-butadiene is a skin irritant. Eye contact can cause conjunctivitis and necrosis of the cornea. Inhalation can cause irritation of the respiratory tract and in higher concentrations can cause anesthesia and respiratory paralysis. Ingestion may cause ulceration and intestinal bleeding. Chronic exposure has caused damage to the lungs, central nervous system, liver, kidneys, spleen and myocardium.
Subacute to chronic toxicity: No effects known.
Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

12 Ecological information

Toxicity
Aquatic toxicity: No further relevant information available.
Persistence and degradability No further relevant information available.
Bioaccumulative potential No further relevant information available.
Mobility in soil No further relevant information available.
Additional ecological information:
General notes:
Do not allow material to be released to the environment without proper governmental permits.
Do not allow undiluted product or large quantities to reach ground water, water course or sewage system.
Avoid transfer into the environment.
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.
Other adverse effects No further relevant information available.

13 Disposal considerations

Waste treatment methods
Recommendation Consult state, local or national regulations to ensure proper disposal.
Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.

14 Transport information

UN-Number	UN1993
DOT, IMDG, IATA	
UN proper shipping name	Flammable liquids, n.o.s. (2-Chloro-1,3-butadiene/Xylene)
DOT	FLAMMABLE LIQUID, N.O.S. (2-Chloro-1,3-butadiene/Xylene)
IMDG, IATA	
Transport hazard class(es)	
DOT	
	
Class	3 Flammable liquids.

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USA

Product name: **2-Chloro-1,3-butadiene, 50% in xylene**

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Label	3
Class	3 (F1) Flammable liquids
Label	3
IMDG, IATA	
	
Class	3 Flammable liquids.
Label	3
Packing group	II
DOT, IMDG, IATA	
Environmental hazards:	Not applicable.
Special precautions for user	Warning: Flammable liquids
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information:	
DOT	
Marine Pollutant (DOT):	No
UN "Model Regulation":	UN1993, Flammable liquids, n.o.s., special provision 640D (2-Chloro-1,3-butadiene/Xylene), 3, II

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture	
GHS label elements	The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)
Hazard pictograms	
 	
GHS02 GHS06	
Signal word	Danger
Hazard statements	
H225	Highly flammable liquid and vapor.
H301+H311	Toxic if swallowed or in contact with skin.
H332	Harmful if inhaled.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
Precautionary statements	
P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/ doctor/...
P303+P361+P353	IF on skin (or hair): 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.
P361	Take off immediately all contaminated clothing.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.
National regulations	
All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.	
SARA Section 313 (specific toxic chemical listings)	
126-99-8	2-Chloro-1,3-butadiene, 50% in xylene
California Proposition 65	
Prop 65 - Chemicals known to cause cancer	
126-99-8	2-Chloro-1,3-butadiene, 50% in xylene
Prop 65 - Developmental toxicity	Substance is not listed.
Prop 65 - Developmental toxicity, female	Substance is not listed.
Prop 65 - Developmental toxicity, male	Substance is not listed.
Information about limitation of use:	
For use only by technically qualified individuals.	
This substance is subject to a Significant New Use Rule (SNUR) promulgated under Section 5(a)(2) of the Toxic Substances Control Act (TSCA). See 40 CFR 721.	
This product is being sold for research and development use.	
This product is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.	
Other regulations, limitations and prohibitive regulations	
Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.	Substance is not listed.
The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.	
Substance is not listed.	
Annex XIV of the REACH Regulations (requiring Authorisation for use)	Substance is not listed.
Chemical safety assessment:	A Chemical Safety Assessment has not been carried out.

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 SDS:	Global Marketing Department
Date of preparation / last revision	11/23/2015 / -
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)	
IMDG: International Maritime Code for Dangerous Goods	
DOT: US Department of Transportation	
IATA: International Air Transport Association	
CAS: Chemical Abstracts Service (division of the American Chemical Society)	
HMS: Hazardous Materials Identification System (USA)	
WHMIS: Workplace Hazardous Materials Information System (Canada)	
LC50: Lethal concentration, 50 percent	
LD50: Lethal dose, 50 percent	
vPvB: very Persistent and very Bioaccumulative	
ACGIH: American Conference of Governmental Industrial Hygienists (USA)	
OSHA: Occupational Safety and Health Administration (USA)	
NTP: National Toxicology Program (USA)	
IARC: International Agency for Research on Cancer	
EPA: Environmental Protection Agency (USA)	