



HEXACHLORO-1,3-BUTADIENE (13C4, 99%)

Safety Data Sheet

according to Regulation (EC) No. 453/2010 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 24/03/2011

Revision date: 12/01/2017

Supersedes: 19/12/2014

Version: 3.0

CLM-2145

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Substance
Substance name : HEXACHLORO-1,3-BUTADIENE (13C4, 99%)
EC no : 201-765-5 (Unlabeled)
CAS No : 93951-70-3
Product code : CLM-2145
Formula : *CCl2=*CCl*CCl=*CCl2
Synonyms : Perchlorobutadiene

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

1.2.1. Relevant identified uses

Main use category : Professional use
Industrial/Professional use spec : For professional use only

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Cambridge Isotope Laboratories, Inc.
50 Frontage Road
Andover, MA 01810
USA

USA: 1-800-322-1174 Int: 1-978-749-8000
cilsales@isotope.com www.isotope.com

Emergency telephone number

Emergency numbers:

Chemtrec: 1-800-424-9300 (24 hours)
International: 1-703-741-5970 (24 hours)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute Tox. 3 (Oral) H301
Acute Tox. 2 (Dermal) H310
Skin Irrit. 2 H315
Eye Dam. 1 H318
Carc. 2 H351

Full text of H-statements: see section 16

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Carc.Cat.3; R40
T; R25
T+; R27
Xi; R41
Xi; R38

Full text of R-phrases: see section 16

GHS-US classification

Acute Tox. 3 (Oral) H301
Acute Tox. 2 (Dermal) H310
Skin Irrit. 2 H315
Eye Dam. 1 H318
Carc. 2 H351

Adverse physicochemical, human health and environmental effects

Kidney, Liver.

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2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS08

GHS06

GHS05

Signal word (CLP) :

Danger

Hazard statements (CLP) :

H301 - Toxic if swallowed
H310 - Fatal in contact with skin
H315 - Causes skin irritation
H318 - Causes serious eye damage
H351 - Suspected of causing cancer (if swallowed, if inhaled, in contact with skin)

Precautionary statements (CLP) :

P264 - Wash Both hands thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P280 - Wear protective gloves, protective clothing, face protection, eye protection
P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER
P302+P352 - IF ON SKIN: Wash with plenty of water
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P308+P313 - IF exposed or concerned: Get medical advice/attention
P310 - Immediately call a doctor

GHS-US labelling

Hazard pictograms (GHS-US) :



GHS08

GHS06

GHS05

Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H301 - Toxic if swallowed
H310 - Fatal in contact with skin
H315 - Causes skin irritation
H318 - Causes serious eye damage
H351 - Suspected of causing cancer (Inhalation, Dermal, oral)

Precautionary statements (GHS-US) :

P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P262 - Do not get in eyes, on skin, or on clothing
P264 - Wash Both hands thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P280 - Wear protective gloves, protective clothing, face protection, eye protection
P301+P310 - IF SWALLOWED: immediately call a POISON CENTER or doctor/physician
P302+P352 - IF ON SKIN: Wash with plenty of soap and water
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P308+P313 - IF exposed or concerned: Get medical advice/attention
P310 - Immediately call a POISON CENTER or doctor/physician
P321 - Specific treatment (see Hazard pictograms (CLP) on this label)
P330 - If swallowed, rinse mouth
P332+P313 - If skin irritation occurs: Get medical advice/attention
P361 - Remove/Take off immediately all contaminated clothing
P362 - Take off contaminated clothing and wash before reuse
P363 - Wash contaminated clothing before reuse
P405 - Store locked up
P501 - Dispose of contents/container to Comply with applicable regulations

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substance

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Name	Product identifier	%	Classification according to Directive 67/548/EEC
HEXACHLORO-1,3-BUTADIENE (13C4, 99%) (Main constituent)	(CAS No) 87-68-3 (Unlabeled) (EC no) 201-765-5 (Unlabeled)	100	Carc. Cat.3; R40 T; R24 T+; R27 Xi; R41 Xi; R38

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
HEXACHLORO-1,3-BUTADIENE (13C4, 99%) (Main constituent)	(CAS No) 87-68-3 (Unlabeled) (EC no) 201-765-5 (Unlabeled)	100	Acute Tox. 3 (Oral), H301 Acute Tox. 2 (Dermal), H310 Skin Irrit. 2, H315 Eye Dam. 1, H318 Carc. 2, H351

Full text of R- and H-statements: see section 16

Name	Product identifier	%	GHS-US classification
HEXACHLORO-1,3-BUTADIENE (13C4, 99%) (Main constituent)	(CAS No) 87-68-3 (Unlabeled)	100	Acute Tox. 3 (Oral), H301 Acute Tox. 2 (Dermal), H310 Skin Irrit. 2, H315 Eye Dam. 1, H318 Carc. 2, H351

Full text of H-statements: see section 16

3.2. Mixture

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
- First-aid measures after inhalation : If breathed in, move person to fresh air. If not breathing, give artificial respiration. Consult a physician.
- First-aid measures after skin contact : Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.
- First-aid measures after eye contact : Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
- First-aid measures after ingestion : Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : May be harmful if inhaled. May cause respiratory tract irritation.
- Symptoms/injuries after skin contact : Fatal in contact with skin. Causes skin irritation.
- Symptoms/injuries after eye contact : Causes serious eye damage.
- Symptoms/injuries after ingestion : Toxic if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

5.2. Special hazards arising from the substance or mixture

- Reactivity : No data available.

5.3. Advice for firefighters

- Firefighting instructions : Wear self contained breathing apparatus for fire fighting if necessary.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

6.1.2. For emergency responders

No additional information available

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6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3. Methods and material for containment and cleaning up

For containment : Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Normal measures for preventive fire protection.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Keep container tightly closed in a dry and well-ventilated place.

Storage conditions : Store at room temperature away from light and moisture.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

HEXACHLORO-1,3-BUTADIENE (13C4, 99%) (87-68-3 (Unlabeled))		
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	0.0200000000 ppm Kidney damage, Confirmed animal carcinogen, Danger of cutaneous absorption
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	0.24 mg/m ³ Potential Occupational Carcinogen
USA NIOSH	NIOSH REL (TWA) (ppm)	0.02 ppm Potential Occupational Carcinogen
USA OSHA	OSHA PEL (TWA) (mg/m ³)	0.24 mg/m ³ California permissible exposure limits for chemical contaminants (Title 8, Article 107)
USA OSHA	OSHA PEL (TWA) (ppm)	0.0200000000 ppm California permissible exposure limits for chemical contaminants (Title 8, Article 107)

8.2. Exposure controls

Personal protective equipment : Gloves. Protective clothing. Protective goggles. Self-contained breathing apparatus.



Hand protection : Wear suitable protective clothing and gloves.

Eye protection : Wear safety glasses with side shields (or goggles) and a face shield.

Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory protection : When appropriate, use NIOSH/CEN approved respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid, clear.
Molecular mass	: 264.73 g/mol (Labeled)
Colour	: Light yellow.
Odour	: No data available.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: -22 - -19 °C (-8 - -2 °F) - lit
Freezing point	: No data available
Boiling point	: 210 - 220 °C (410 - 428 °F) - lit
Flash point	: No data available

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Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: 0.3 hPa (0.2 mmHg) at 20 °C (68 °F)
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Density	: 1.665 at 25 °C (77 °C)
Solubility	: No data available
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable if stored under recommended conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

No data available.

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

Formed under fire conditions: carbon oxides, Hydrogen chloride gas.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Toxic if swallowed. Fatal in contact with skin.

HEXACHLORO-1,3-BUTADIENE (13C4, 99%) (87-68-3 (Unlabeled))	
LD50 oral rat	82 mg/kg
LD50 dermal rabbit	100 mg/kg
ATE CLP (oral)	100.000 mg/kg bodyweight
ATE CLP (dermal)	50.000 mg/kg bodyweight
	LC50 Inhalation - Mouse - 370 mg/m3

Skin corrosion/irritation	: Causes skin irritation. Skin - rabbit Result: Skin irritation - 24 h
Serious eye damage/irritation	: Causes serious eye damage. Eyes - rabbit Result: Mild eye irritation 24.00 h
Respiratory or skin sensitisation	: Not classified No data available
Germ cell mutagenicity	: Not classified
Carcinogenicity	: This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification. Limited evidence of carcinogenicity in animal studies.
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified No data available
Specific target organ toxicity (repeated exposure)	: Not classified No data available

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Aspiration hazard	: Not classified
Potential adverse human health effects and symptoms	: Liver injury may occur., kidney injury may occur., material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, cough, wheezing, laryngitis, shortness of breath, headache, nausea, vomiting. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Symptoms/injuries after inhalation	: May be harmful if inhaled. May cause respiratory tract irritation.
Symptoms/injuries after skin contact	: Fatal in contact with skin. Causes skin irritation.
Symptoms/injuries after eye contact	: Causes serious eye damage.
Symptoms/injuries after ingestion	: Toxic if swallowed.

SECTION 12: Ecological information

12.1. Toxicity

HEXACHLORO-1,3-BUTADIENE (13C4, 99%) (87-68-3 (Unlabeled))

LC50 fish 1	0.14 mg/l Oncorhynchus mykiss (rainbow trout) - 96 h
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12.2. Persistence and degradability

HEXACHLORO-1,3-BUTADIENE (13C4, 99%) (87-68-3 (Unlabeled))

Persistence and degradability	No data available.
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12.3. Bioaccumulative potential

HEXACHLORO-1,3-BUTADIENE (13C4, 99%) (87-68-3 (Unlabeled))

Bioaccumulative potential	No data available.
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12.4. Mobility in soil

HEXACHLORO-1,3-BUTADIENE (13C4, 99%) (87-68-3 (Unlabeled))

Ecology - soil	No data available.
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12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

Other adverse effects : No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste)	: Waste materials should be disposed of under conditions which meet Federal, State, and Local environmental control regulations.
Waste disposal recommendations	: Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.
Ecology - waste materials	: Dispose of as unused product.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

UN-No.(DOT)	: 2279
DOT NA no.	UN2279

14.2. UN proper shipping name

Proper Shipping Name (DOT)	: Hexachlorobutadiene
Transport hazard class(es) (DOT)	: 6.1 - Class 6.1 - Poisonous materials 49 CFR 173.132
Hazard labels (DOT)	: 6.1 - Poison inhalation hazard



Packing group (DOT)	: III - Minor Danger
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DOT Special Provisions (49 CFR 172.102)	: IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672). T4 - 2.65 178.274(d)(2) Normal..... 178.275(d)(3) TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / (1 + a (tr - tf))$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.
DOT Packaging Exceptions (49 CFR 173.xxx)	: 153
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 203
DOT Packaging Bulk (49 CFR 173.xxx)	: 241
Marine pollutant	: N

14.3. Additional information

Other information : No supplementary information available.

Overland transport

Packing group (ADR)	: III
Class (ADR)	: 6.1 - Toxic substances
Hazard identification number (Kemler No.)	: 60
Classification code (ADR)	: T1
Danger labels (ADR)	: 6.1 - Toxic substances



Orange plates :

Tunnel restriction code	: E
Limited quantities (ADR)	: 5I
EAC code	: 2X
Excepted quantities (ADR)	: E1

Transport by sea

DOT Vessel Stowage Location	: A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.
MFAG-No	: 151

Air transport

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 60 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 220 L
Civil Aeronautics Law	: Toxic and infectious substances/Toxic substances(Hazardous materials notice Appended Table 1 Article 194 of the Enforcement Regulations)

14.4. Environmental hazards

Other information : No supplementary information available.

14.5. Special precautions for user

14.6. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

HEXACHLORO-1,3-BUTADIENE (13C4, 99%) (87-68-3 (Unlabeled))

Subject to reporting requirements of United States SARA Section 313

SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302
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SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard
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15.2. International regulations

CANADA

HEXACHLORO-1,3-BUTADIENE (13C4, 99%) (87-68-3 (Unlabeled))

Listed on the Canadian DSL (Domestic Substances List)

15.2.1. National regulations

No additional information available

15.3. US State regulations

HEXACHLORO-1,3-BUTADIENE (13C4, 99%)(87-68-3 (Unlabeled))

U.S. - California - Proposition 65 - Carcinogens List	Yes
State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List WARNING! This product contains a chemical known by the state of California to cause cancer.

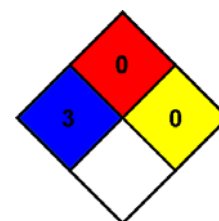
SECTION 16: Other information

Other information : This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

Full text of R-, H- and EUH-statements:

Acute Tox. 2 (Dermal)	Acute toxicity (dermal), Category 2
Acute Tox. 3 (Oral)	Acute toxicity (oral), Category 3
Carc. 2	Carcinogenicity, Category 2
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Skin Irrit. 2	Skin corrosion/irritation, Category 2
H301	Toxic if swallowed
H310	Fatal in contact with skin
H315	Causes skin irritation
H318	Causes serious eye damage
H351	Suspected of causing cancer
R24	Toxic in contact with skin
R27	Very toxic in contact with skin
R38	Irritating to skin
R40	Limited evidence of a carcinogenic effect
R41	Risk of serious damage to eyes
T	Toxic
T+	Very toxic
Xi	Irritant

NFPA health hazard : 3 - Materials that, under emergency conditions, can cause serious or permanent injury.
NFPA fire hazard : 0 - Materials that will not burn under typical dire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.
NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



HMIS III Rating

Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given
Flammability : 0 Minimal Hazard
Physical : 0 Minimal Hazard

CIL Multi-Solvent Mixture SDS

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product