

# SAFETY DATA SHEET

Version:	1.1
Revision Date:	2022-09-07
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### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifiers

Product Number:	C0779
Product name:	cis-1,4-Dichloro-2-butene
CAS Registry Nr:	1476-11-5

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

Laboratory chemicals, M	anufacture of substances.
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#### 1.3 Details of the supplier of the safety data sheet

Company:	Chemodex AG
	CH - 9000 St. Gallen
	Switzerland, Europe
	Tel: +41 71 244 48 25
	Fax: +41 71 244 48 26
	Email: info@chemodex.com
	Website: www.chemodex.com

#### 1.4 Emergency telephone number

Tox Info Suisse:
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# **SECTION 2: Hazards identification**

#### 2.1 Classification of the substance or mixture

### Classification according to Regulation (EC) No 1272/2008

Flammable liquids (Category 3)	H226
Acute toxicity, Oral (Category 3)	H301
Acute toxicity, Inhalation (Category 2)	H330
Acute toxicity, Dermal (Category 3)	H311
Skin corrosion (Sub-category 1B)	H314

Serious eye damage (Category 1)	H318	
Carcinogenicity (Category 1B)	H350	
Specific target organ toxicity - single exposure (Category 3), Respiratory system	H335	
Short-term (acute) aquatic hazard (Category 1)	H400	
Long-term (chronic) aquatic hazard (Category 1)	H410	
For the full text of the H-Statements mentioned in this Section, see Section 16.		

## 2.2 Label elements

# Labelling according Regulation (EC) No. 1272/2008

	ctogram	
Signal word Danger	gnal word	•

# Hazard statement(s)

H226	Flammable liquid and vapor.
H301 + H311	Toxic if swallowed or in contact with skin.
H314	Causes severe skin burns and eye damage.
H330	Fatal if inhaled.
H335	May cause respiratory irritation.
H350	May cause cancer.
H410	Very toxic to aquatic life with long lasting effects.

## **Precautionary statement(s)**

r recouldionary states	
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Supplemental Hazard	none
Statements	
Reduced Labeling (<=	- 125 ml)
Pictogram	
Signal Word	Danger
Hazard statement(s) H330	Fatal if inhaled.
H350	May cause cancer.
H314	Causes severe skin burns and eye damage.

H301 + H311	Toxic if swallowed or in contact with skin.
Precautionary stater	nent(s)
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Supplemental Hazard Statements	none

## 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## **SECTION 3: Composition/information on ingredients**

#### 3.1 Substances

Mol. Formula:	CICH2CH=CHCH2CI
Mol. Weight:	125.00 g/mol
CAS Registry No.:	1476-11-5
EC-No.	216-021-5

Component	Classification	Concentration
cis-1,4-Dichlorobut-2-ene		
CAS-No. 1476-11-5 EC-No. 216-021-5	Flam. Liq. 3; Acute Tox. 3; Acute Tox. 2; Acute Tox. 3; Skin Corr. 1B; Eye Dam. 1; Carc. 1B; STOT SE 3; Aquatic Acute 1; Aquatic Chronic 1; H226, H301, H330, H311, H314, H318, H350, H335, H400, H410	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

## **SECTION 4: First aid measures**

#### 4.1 Description of first aid measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

#### If inhaled

After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

## In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

## In case of eye contact

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

#### If swallowed

If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible. Do not attempt to neutralise.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

## **SECTION 5: Firefighting measures**

5.1 Extinguishing media

#### Suitable extinguishing media Water Foam Carbon dioxide (CO2) Dry powder

## Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

#### 5.2 Special hazards arising from the substance or mixture

Carbon oxides Hydrogen chloride gas Combustible. Vapors are heavier than air and may spread along floors. Forms explosive mixtures with air at elevated temperatures. Development of hazardous combustion gases or vapours possible in the event of fire.

#### 5.3 Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

#### 5.4 Further information

Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

#### **SECTION 6: Accidental release measures**

#### 6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

#### 6.2 Environmental precautions

Do not let product enter drains. Risk of explosion.

#### 6.3 Methods and material for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material. Dispose of properly. Clean up affected area.

#### 6.4 Reference to other sections

For disposal see section 13.

## **SECTION 7: Handling and storage**

#### 7.1 Precautions for safe handling

#### Advice on safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols. **Advice on protection against fire and explosion** 

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

#### Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions
Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Keep locked up or in an area accessible only to qualified or authorized persons.
Storage stability
Recommended storage temperature 2 - 8 °C Light sensitive. Moisture sensitive.
Storage class
Storage class (TRGS 510): 3: Flammable liquids

#### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

## **SECTION 8: Exposure controls/personal protection**

#### 8.1 Control parameters

#### Components with workplace control parameters

Contains no substances with occupational exposure limit values.

#### 8.2 Exposure controls

#### Appropriate engineering controls

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

#### Personal protective equipment

#### Eye/face protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

## **Body Protection**

impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

#### **Respiratory protection**

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Control of environmental exposure

Do not let product enter drains. Risk of explosion.

#### **SECTION 9: Physical and chemical properties**

a)	Appearance:	Colour: Colourless to light yellow Form: Liquid
b)	Odour:	No data available
c)	Odour Threshold:	No data available
d)	pH:	No data available
e)	Initial boiling point and boiling range:	-48 °C (lit.)
f)	Boiling point	152 °C/758 mmHg (lit.)

9.1 Information on basic physical and chemical properties

g)	Flash point:	No data available
h)	Evaporation rate:	No data available
i)	Flammability (solid, gas):	No data available
j)	Upper/lower flammability or	
	explosive limits:	No data available
k)	Vapour pressure:	No data available
I)	Vapour density:	No data available
m)	Relative density:	1.188 g/mL at 25 °C (lit.)
n)	Water solubility:	Soluble in acetone or methanol.
o)	Partition coefficient (n-	
	octanol/water):	No data available
p)	Auto-ignition temperature:	No data available
q)	Decomposition temperature:	No data available
r)	Viscosity:	No data available
s)	Explosive properties:	No data available
t)	Oxidizing properties:	No data available

9.2 Other safety information

No data available

# **SECTION 10: Stability and reactivity**

## 10.1 Reactivity

Vapor/air-mixtures are explosive at intense warming.

## 10.2 Chemical stability

Stable for at least 2 years under recommended storage conditions.

## 10.3 Possibility of hazardous reactions

No data available

## 10.4 Conditions to avoid

Heating.

## 10.5 Incompatible materials

## Strong oxidizing agents

## 10.6 Hazardous decomposition products

In the event of fire: see section 5

# SECTION 11: Toxicological information

11.1 Information on toxicological effects

	lation on toxicological effects
Acute toxi	city
LD50 Oral	- Rat - 89 mg/kg
	The value is given in analogy to the following substances: 1,4-dichlorobut-2-ene
Acute toxic	sity estimate Oral - 89 mg/kg
(Calculatio	n method)
LC50 Inhal	lation - 4 h - 0,6 mg/l - vapor
Remarks: /	Acute toxicity estimate Inhalation - 0,6 mg/l - vapor
(Calculatio	n method)
	nal - Rabbit - 733,5 mg/kg
	The value is given in analogy to the following substances: 1,4-dichlorobut-2-ene
	ity estimate Dermal - 733,5 mg/kg
(Calculatio	
	osion/irritation
	Causes skin burns.
	is given in analogy to the following substances: 1,4-dichlorobut-2-ene
-	ye damage/eye irritation
No data av	ailable
Respirato	ry or skin sensitisation
No data av	ailable
Germ cell	mutagenicity
No data av	ailable
Carcinoge	nicity
IARC:	No component of this product present at levels greater than or equal to 0.1% is identified
	as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified
	as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified
	as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified
	as a carcinogen or potential carcinogen by OSHA.
	tive toxicity
No data av	ailable
Specific ta	arget organ toxicity - single exposure
No data av	ailable
Specific ta	arget organ toxicity - repeated exposure
No data av	ailable
Aspiration	n hazard
No data av	ailable
Additional	Information
Material is	extremely destructive to tissue of the mucous membranes and upper respiratory tract,
	skin., Symptoms of exposure may include burning sensation, coughing, wheezing,
	shortness of breath, headache, nausea, and vomiting., spasm, inflammation and edema of
	i, pneumonitis, pulmonary edema
	ot available

## **SECTION 12: Ecological information**

#### 12.1 Toxicity

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The value is given in analogy to the following substances.

#### 12.2 Persistence and degradability

No data available

## 12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

#### 12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

#### 12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. No data available

## **SECTION 13: Disposal considerations**

#### 13.1 Waste treatment methods

## Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

#### Contaminated packaging

Dispose of as unused product.

## **SECTION 14:** Transport information

14.1 - 14.5 UN number and proper shipping name, Transport hazard class(es), Transport hazard class(es), Environmental hazards

#### UN number

ADR/RID:	2922	IMDG:	2922	IATA:	2922
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## UN proper shipping name

ADR/RID:	CORROSIVE LIQUID, TOXIC, N.O.S. (cis-1,4-Dichlorobut-2-ene)				
IMDG:	CORROSIVE LIQUID, TOXIC, N.O.S. (cis-1,4-Dichlorobut-2-ene)				
IATA:	Corrosive liquid, toxic, n	.o.s. (cis	-1,4-Dichlorobut-2	2-ene)	
Transport ha	azard class(es)				
ADR/RID:	8 (6.1)	IMDG:	8 (6.1)	IATA:	8 (6.1)
Packaging g	iroup				
r ackaging g	loup				
ADR/RID:	II	IMDG:	I	IATA:	II
Environmen	tal hazards				
ADR/RID:	Yes	IMDG:	П	IATA:	II
ADR/RID.	Tes	INDG.	П	IATA.	П
14.6 Special	precautions for user				
•	•				
No data avai	ladie				
147 Curther	information				
14.7 Further					
No data avai	lable				

### **SECTION 15: Regulatory information**

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture No data available

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out.

## **SECTION 16: Other information**

## Full text of H-Statements referred to under sections 2 and 3.

H226	Flammable liquid and vapor.
H301	Toxic if swallowed.
H301 + H311	Toxic if swallowed or in contact with skin.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H330	Fatal if inhaled.
H335	May cause respiratory irritation.
H350	May cause cancer.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

## **Further information**

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