SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Revision Date 05.11.2010 Version 6.8

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Catalogue No.	814283
Product name	Bis(trichloromethyl) carbonate for synthesis
REACH Registration Number	A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

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

Identified uses	Chemical for synthesis For additional information on uses please refer to the Merck Chemicals portal (www.merck-chemicals.com).

1.3 Details of the supplier of the safety data sheet

Company	Merck KGaA * 64271 Darmstadt * Germany * Phone:+49 6151 72-0
Responsible Department	LS-QHC * e-mail: prodsafe@merckgroup.com

1.4 Emergency telephone number

Please contact the regional company representation in your country.

2. Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Acute toxicity, Category 2, Inhalation, H330

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

Classification (67/548/EEC or 1999/45/EC)

T+; R26

For the full text of the R-phrases mentioned in this Section, see Section 16.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms

Signal word

Danger

Hazard statements

H330 Fatal if inhaled.

Precautionary statements

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P309 + P310 IF exposed or if you feel unwell: Immediately call a POISON CENTER or doctor/physician.

CAS-No. 32315-10-9

Labelling (67/548/EEC or 1999/45/EC)

Symbol(s)	T+	Very toxic
R-phrase(s)	26	Very toxic by inhalation.
S-phrase(s)	28-36/37/39-45	After contact with skin, wash immediately with plenty of polyethylene glycol 400 then rinse with plenty of water. Wear suitable protective clothing, gloves and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
EC-No.	250-986-3	

Reduced labelling (≤125 ml)

Symbol(s)	T+	Very toxic
R-phrase(s)	26	Very toxic by inhalation.
S-phrase(s)	36/37/39-45	Wear suitable protective clothing, gloves and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

2.3 Other hazards
None known.

3. Composition/information on ingredients

Formula	$(Cl_3CO)_2CO$	$C_3Cl_6O_3$ (Hill)
CAS-No.	32315-10-9	
EC-No.	250-986-3	
Molar mass	296,75 g/mol	

4. First aid measures

4.1 Description of first aid measures
General advice
First aider needs to protect himself.

After inhalation: fresh air. Immediately apply artificial respiration. If necessary oxygen. Immediately call in physician.

After skin contact: wash off with plenty of water. Remove contaminated clothing.

After eye contact: rinse out with plenty of water.

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

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

4.3 Indication of immediate medical attention and special treatment needed

No information available.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO_2), Foam, 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

Combustible material
Development of hazardous combustion gases or vapours possible in the event of fire.
Fire may cause evolution of:
Hydrogen chloride gas, Phosgene

5.3 Advice for firefighters

Special protective equipment for fire-fighters

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

Further information

Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts in all circumstances. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

6.2 Environmental precautions

Do not empty into drains.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.
Observe possible material restrictions (see sections 7.2 and 10.5).
Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections

Indications about waste treatment see section 13.

7. Handling and storage

7.1 Precautions for safe handling

Observe label precautions.

Work under hood. Do not inhale substance.

7.2 Conditions for safe storage, including any incompatibilities

Dry. Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorised persons.

Store at +15°C to +25°C.

7.3 Specific end uses
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

8. Exposure controls/personal protection
8.1 Control parameters

8.2 Exposure controls
Engineering measures
Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

Individual protection measures
Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Hygiene measures
Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance. Work under hood. Do not inhale substance.

Eye/face protection
Safety glasses

Hand protection
full contact:

Glove material:	Nitrile rubber
Glove thickness:	0,11 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
Glove thickness:	0,11 mm
Break through time:	> 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L (splash contact).
The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.
This recommendation applies only to the product stated in the safety data sheet<(>,<)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Other protective equipment:
protective clothing

Respiratory protection
required when dusts are generated.
Recommended Filter type: Filter P 3 (acc. to DIN 3181) for solid and liquid particles of toxic and very toxic substances
The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Environmental exposure controls
Do not empty into drains.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	crystals
Colour	light yellow
Odour	unpleasant
Odour Threshold	No information available.
pH	No information available.
Melting point	77 - 81 °C
Boiling point/boiling range	203 - 206 °C at 1.013 hPa
Flash point	No information available.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapour pressure	16 hPa at 90 °C
Relative vapour density	No information available.
Relative density	1,6 g/cm³ at 20 °C
Water solubility	at 20 °C insoluble
Partition coefficient: n-octanol/water	log Pow: 2,94 Method: (calculated) No remarkable bioaccumulation potential is expected (log Pow 1-3). (Lit.)
Autoignition temperature	No information available.
Decomposition temperature	> 360 °C
Viscosity, dynamic	No information available.
Explosive properties	No information available.

Oxidizing properties	No information available.

9.2 Other data

none

10. Stability and reactivity

10.1 Reactivity

Dangerous reactions are not expected handling the product according to its intented use.

10.2 Chemical stability

heat-sensitive
sensitive to moisture
Sensitive to air.

10.3 Possibility of hazardous reactions

Water, Alcohols, amides, Amines, ferric oxide, alkalines, Activated charcoal

Generates dangerous gases or fumes in contact with:

10.4 Conditions to avoid

Heating.
Exposure to moisture.

10.5 Incompatible materials

no information available

10.6 Hazardous decomposition products

in the event of fire: See chapter 5.

11. Toxicological information

11.1 Information on toxicological effects

Acute inhalation toxicity
absorption
Symptoms: Possible damages:, Inhalation may lead to the formation of oedemas in the respiratory tract.

Skin irritation
Possible damages: slight irritation

Eye irritation
Possible damages: slight irritation

Specific target organ toxicity - single exposure
The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ toxicity - repeated exposure
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard
No aspiration toxicity classification

11.2 Further information

Further information
Quantitative data on the toxicity of this product are not available.

Further toxicological data:

Symptoms may be delayed.

Further data:

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

12. Ecological information

12.1 Toxicity
No information available.

12.2 Persistence and degradability
No information available.

12.3 Bioaccumulative potential
Partition coefficient: n-octanol/water
log Pow: 2,94
Method: (calculated)
No remarkable bioaccumulation potential is expected (log Pow 1-3). (Lit.)

12.4 Mobility in soil
No information available.

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other adverse effects
Additional ecological information
We have no quantitative data concerning the ecological effects of this product.

Further information on ecology

Do not allow to run into surface waters, wastewater, or soil.

13. Disposal considerations

Waste treatment methods
See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

14. Transport information

ADR/RID
UN 2811 TOXIC SOLID, ORGANIC, N.O.S. (BIS(TRICHLOROMETHYL)-CARBONATE), 6.1, I

IATA
UN 2811 TOXIC SOLID, ORGANIC, N.O.S. (BIS(TRICHLOROMETHYL)-CARBONATE), 6.1, I

IMDG
UN 2811 TOXIC SOLID, ORGANIC, N.O.S. (BIS(TRICHLOROMETHYL)-CARBONATE), 6.1, I
EmS F-A S-A

The transport regulations are cited according to international regulations and in the form applicable in Germany. Possible national deviations in other countries are not considered.

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Major Accident Hazard	96/82/EC
Legislation	Very toxic 1 Quantity 1: 5 t Quantity 2: 20 t

Occupational restrictions	Take note of Dir 94/33/EC on the protection of young people at work. Take note of Dir 92/85/EEC on the safety and health at work of pregnant workers.

National legislation

Storage class VCI	6.1A Combustible substances, toxic

15.2 Chemical Safety Assessment

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

16. Other information

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

H330	Fatal if inhaled.

Full text of R-phrases referred to under sections 2 and 3

R26	Very toxic by inhalation.

Training advice
Provide adequate information, instruction and training for operators.

Regional representation:	This information is given on the authorised Safety Data Sheet for your country.

Key or legend to abbreviations and acronyms used in the safety data sheet
Used abbreviations and acronyms can be looked up at www.wikipedia.org.

The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.