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

1.1 Product identifier

Trade name/designation	Ethyl chloride
Art-Nr(n).	1200, 1205, 70120
Substance name	chloroethane
INDEX No.	602-009-00-0
EC No.	200-830-5
REACH No.	01-2119487479-17
CAS No.	75-00-3

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

Use of the substance/mixture
Intermediate.

1.3 Details of the supplier of the safety data sheet

Supplier
GHC Gerling, Holz & Co. Handels GmbH
Ruhrstraße 113
D-22761 Hamburg
Telephone +49 40 853 123 0
E-mail hamburg@ghc.de

Department responsible for information:
GHC Gerling, Holz & Co. Handels GmbH
Telephone +49 40 853 123 0
Website www.ghc.com

E-mail (competent person):
msds@ghc.de

1.4 Emergency telephone number

EN: Poison Information Center Mainz +49 6131 19240

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP]	Classification procedure
Flam. Gas 1A, H220	
Press. Gas (Liq.), H280	
Carc. 2, H351	
Repr. 1B, H360FD	
Aquatic Chronic 3, H412	

Hazard statements for physical hazards
H220 Extremely flammable gas.
H280 Contains gas under pressure; may explode if heated.

Hazard statements for health hazards
H351 Suspected of causing cancer.
H360FD May damage fertility. May damage the unborn child.

Hazard statements for environmental hazards
H412 Harmful to aquatic life with long lasting effects.

Additional information
List substance (Regulation (EC) No. 1272/2008, Annex VI, part 3)

Hazard pictograms

GHS02 GHS08 GHS04

2.2 Label elements

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

Signal word
Danger

Hazard statements
H220 Extremely flammable gas.
H280 Contains gas under pressure; may explode if heated.
H351 Suspected of causing cancer.
H360FD May damage fertility. May damage the unborn child.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements
P202 Do not handle until all safety precautions have been read and understood.
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 and eye/face protection.
P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P308 + P313 IF exposed or concerned: Get medical advice/attention.
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

Supplemental hazard information
EIGA0357 Asphyxiant in high concentrations.
EIGA0803 Restricted to professional users.

2.3 Other hazards

Adverse physicochemical effects
In use, may form flammable/explosive vapour-air mixture.

Adverse human health effects and symptoms
Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.
Contact with liquid may cause cold burns/frostbite.

Other adverse effects
The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Results of PBT and vPvB assessment
This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

SECTION 3: Composition / information on ingredients

3.1 Substances

Substance name	chloroethane
INDEX No.	602-009-00-0
EC No.	200-830-5
REACH No.	01-2119487479-17
CAS No.	75-00-3
ATE	ATE(inhalation gas): > 19000 ppm

3.2 Mixtures

not applicable

SECTION 4: First aid measures

4.1 Description of first aid measures

General information
Remove contaminated, saturated clothing immediately.
Call a physician immediately.
Alcohol increases toxic effects.
First aider: Pay attention to self-protection!

Following inhalation
Remove casualty to fresh air and keep warm and at rest.
In case of respiratory standstill give artificial respiration by respiratory bag (Ambu bag) or respirator. Obtain medical assistance..

Following skin contact
In case of skin contact rinse with warm water.
In case of frostbite, wash with plenty of water; do not remove clothing.
In case of frostbite rinse with lukewarm (not hot) water for at least 15 minutes. Do not remove clothing frozen to the skin.
Thaw with lukewarm water. Apply a sterile dressing. Obtain medical assistance.

After eye contact
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical assistance.

Following ingestion
Ingestion is not considered a potential route of exposure.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms
The following symptoms may occur in case of strong exposition:
Cardiopulmonary arrest.
Depression of central nervous system
Unconsciousness
Vomiting
Headache

Effects
Long-term inhaling of separation products may cause pulmonary oedema.
Cardiac arrhythmias
Diminished responsiveness
Made worse through the drinking of alcohol beverages

4.3 Indication of any immediate medical attention and special treatment needed

Notes for the doctor
Treat symptomatically.
To supervise the blood circulation.
Do not apply drugs of the adrenaline ephedrine group.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Extinguishing powder

Unsuitable extinguishing media
Carbon dioxide (CO_2)
Water spray jet
Full water jet

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products
In case of fire formation of dangerous gases possible.
Hydrogen chloride (HCl)
Carbon monoxide
Carbon dioxide (CO_2)
Chlorine (Cl_2)
Phosgene

5.3 Advice for firefighters

Special protective equipment for firefighters
Wear a self-contained breathing apparatus and chemical protective clothing.

Additional information
If possible, shut off gas valves and move containers to a safe location.
Use water spray jet to protect personnel and to cool endangered containers.
Exposure to fire may cause rupture / explosion of the containers.
Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur. Extinguish any other fire.
Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Use personal protection equipment.
Leave the danger area.
Keep people away and stay on the upwind side.

For emergency responders
Personal protection by wearing close-fitting protective clothing and breathing apparatus.
Pay attention to extension of gas especially at ground (heavier than air) and in direction of the wind.
Remove persons to safety.
Eliminate all ignition sources if safe to do so.

6.2 Environmental precautions

If possible, stop flow of product.
Do not allow to enter into soil/subsoil.
Do not allow to enter into surface water or drains.

6.3 Methods and material for containment and cleaning up

For containment
If necessary, secure leaky pressure receptacles using a salvage container.
Prevent the liquid from spreading over a wide area (set up barriers, cover sewage systems).

For cleaning up
Leave to vapourize.
Provide adequate ventilation.

6.4 Reference to other sections

Disposal: see section 13
Personal protection equipment: see section 8

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures
Use only in well-ventilated areas.
Transfer and handle product only in closed systems.
Usual measures for fire prevention.
Containers' temperature should not be increased above 50 °C.
The working pressure in the receptacle must not exceed the saturation vapour pressure of the pure product resulting at a temperature of 50 °C.
Prevent cylinders from falling over.
Take precautionary measures against static discharges. Ground barrels and installations. Use only antistatically equipped (spark-free) tools.
Use explosion-proof machinery, apparatus, ventilation facilities, tools etc.
Ensure valve protection device is correctly fitted.
Ensure valve outlet cap nut or plug (where provided) is correctly fitted.
Open valve slowly to avoid pressure shock.
Do not allow backflow into the container.
Entering of water into the container must be prevented.
No water to valves, flanges and other fittings.

Purging of pipes and valves with inert gases - to avoid: water, solvents.

Advices on general occupational hygiene
When using do not eat, drink, smoke, sniff.
Wash hands before breaks and after work.
Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels
All regulations and local requirements for the storage of containers have to be respected.
Keep container tightly closed and in a well-ventilated place.
Containers' temperature should not be increased above 50 °C.
Prevent cylinders from falling over.
Only use containers specifically approved for the substance/product.
Information on suitable materials for receptacles and valves see ISO 11114.

Storage class
2A Gases (except aerosol dispensers and lighters)

Materials to avoid
Do not store together with explosives.
Do not store together with flammable liquids.
Do not store together with flammable solids.
Do not store together with pyrophoric and self-heating substances.
Do not store together with oxidizing liquids or oxidizing solids.
Do not store together with toxic liquids or toxic solids.
Do not store together with infectious substances.
Do not store together with radioactive material.
Do not store together with food or feed.

7.3 Specific end use(s)

Recommendation
Use only as an intermediate under strictly controlled conditions.
An exposure scenario is not required.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values

CAS No.	EC No.	Substance name	occupational exposure limit value
75-00-3	200-830-5	Chloroethane	100 [ml/m³(ppm)] 268 [mg/m³] (IE)

DNEL worker

CAS No.	Substance name	DNEL value	DNEL type	Remark
75-00-3	chloroethane	5.01 mg/kg bw/day	long-term dermal (systemic)	Assessment factor 525
75-00-3	chloroethane	37.7 mg/m³	long-term inhalative (systemic)	Assessment factor 75

DNEL Consumer

CAS No.	Substance name	DNEL value	DNEL type	Remark
75-00-3	chloroethane	1.79 mg/kg bw/day	Long-term – oral, systemic effects	Assessment factor 1050
75-00-3	chloroethane	1.79 mg/kg bw/day	long-term dermal (systemic)	Assessment factor 1050
75-00-3	chloroethane	6.7 mg/m³	long-term inhalative (systemic)	Assessment factor 150

PNEC

CAS No.	Substance name	PNEC Value	PNEC type	Remark
75-00-3	chloroethane	0.006 mg/L	aquatic, marine water	Assessment factor 10000
75-00-3	chloroethane	0.031 mg/kg dw	soil	

CAS No.	Substance name	PNEC Value	PNEC type	Remark
75-00-3	chloroethane	0.031 mg/kg dw	sediment, marine water	
75-00-3	chloroethane	0.058 mg/L	aquatic, freshwater	Assessment factor 1000
75-00-3	chloroethane	0.307 mg/kg dw	sediment, freshwater	
75-00-3	chloroethane	0.58 mg/L	aquatic, intermittent release	Assessment factor 100
75-00-3	chloroethane	140 mg/L	sewage treatment plant (STP)	Assessment factor 1

8.2 Exposure controls

Appropriate engineering controls

Technical measures to prevent exposure
Transfer and handle only in enclosed systems.
Use only as an intermediate under strictly controlled conditions.

Personal protection equipment

Eye/face protection
Protective goggles according to EN 166, in case of increased risk add protective face shield.

Hand protection
Safety gloves according to EN 374:
Glove material specification [make/type, thickness, permeation time/life, wetting resistance]: IIR, >= 0,5 mm, > 10 min
Safety gloves according to EN 388:
Chromate-free leather

Body protection:
Safety shoes with steel toecap.
Body covering work clothing or chemical resistant suit at increased risk.

Respiratory protection
Keep self contained breathing apparatus readily available for emergency use.
Respiratory protection necessary at:
high concentrations
Respiratory protection complying with EN 137.
Suitable respiratory protection apparatus:
Short-term: filter apparatus, filter AX, otherwise environment-independent breathing apparatus.
In case of rescue and maintenance activities in storage containers use environment-independent breathing apparatus because of risk of suffocation due to displacement of oxygen

Thermal hazards
Use cold-resistant protective equipment.

Environmental exposure controls

Remark
Prevent release to the environment.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state
Gaseous / liquefied under pressure.

Colour
colourless

Odour
pungent, ethereal

Safety relevant basis data

	Value	Method	Source, Remark
Odour threshold:			not determined
Melting point/freezing point			not applicable

	Value	Method	Source, Remark
Boiling point or initial boiling point and boiling range	13.1 °C pressure 1013 hPa		
flammability			inflammable
Lower and upper explosion limit	Upper explosion limit 15 Vol-%		
Lower and upper explosion limit	Lower explosion limit 3.6 Vol-%		
Flash point			not applicable
Auto-ignition temperature	510 °C	DIN 51794	
Decomposition temperature			not determined
pH			not applicable
Viscosity			not applicable
Solubility(ies)	Water solubility 5.74 g/L (20°C)		Reacts with water
Partition coefficient n-octanol/water (log value)	1.43		
Vapour pressure	1342 hPa (20°C)		
Density and/or relative density			not applicable
Relative vapour density	2.31		air = 1
particle characteristics			not applicable

9.2 Other information

Information with regard to physical hazard classes

Gases under pressure

Safety characteristics

	Value	Method, Result	Source, Remark
Critical temperature	187.2 °C		

Other information
Vapours are heavier than air.

SECTION 10: Stability and reactivity

10.1 Reactivity

Formation of explosive gas mixtures in contact with air.

10.2 Chemical stability

The substance is chemically stable under recommended conditions of storage, use and temperature.

10.3 Possibility of hazardous reactions

Must not be mixed with air or oxygen.
Danger of fire and explosion with oxidants, alkali metals and earth alkali metals.

10.4 Conditions to avoid

Heat sources / heat - risk of bursting.
Ignition sources, open flames, glowing metal surfaces, etc.

10.5 Incompatible materials

Alkali metals
Alkaline earth metal
Aluminium / Aluminium alloys.
Zinc
Oxidising agent
Water / moisture.
Light

10.6 Hazardous decomposition products

Phosgene
Hydrochloric gas

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Animal data

	Effective dose	Method,Evaluation	Source, Remark
Acute oral toxicity			Study technically not feasible.
Acute dermal toxicity			Study technically not feasible.
Acute inhalation toxicity	CAS No.75-00-3 chloroethane Acute inhalation toxicity (gas) LC50: > 19000 ppm Species Rat Exposure time 4 h	OECD 403	

Assessment/classification
Based on available data, the classification criteria are not met.

Skin corrosion/irritation

Other information
Study technically not feasible.

Serious eye damage/irritation

Other information
Study technically not feasible.

Sensitisation to the respiratory tract

Other information
No data available

Skin sensitisation

Other information
Study technically not feasible.

Repeated dose toxicity (subacute, subchronic, chronic)

	Effective dose	Method	Specific effects:	Organs affected:	Source, Remark
Subchronic inhalation toxicity	NOAEC 19000 ppm Species Mouse	OECD 413			

Additional information
Based on available data, the classification criteria are not met.

Germ cell mutagenicity

	Value	Method	Result / Evaluation	Remark
In vitro mutagenicity/genotoxicity	Gene mutation	OECD 476		
In vivo mutagenicity/genotoxicity	Inhalation Species Mouse	OECD 474		

Assessment/classification
Based on available data, the classification criteria are not met.

Carcinogenicity

Animal data

	Value	Method	Result / Evaluation	Remark
Carcinogenicity	inhalative 15000 ppm Species rat (male/female) Exposure duration 2 a	OECD 451		

Assessment/classification
Suspected of causing cancer.

Reproductive toxicity

Animal data

	Value	Method	Result / Evaluation	Remark
Reproductive toxicity	inhalative NOAEC 7000 ppm Species Rat	OECD 443		

Assessment/classification
May damage fertility. May damage the unborn child.

STOT-single exposure

STOT SE 1 and 2

Assessment/classification
Based on available data, the classification criteria are not met.

STOT-repeated exposure

Assessment/classification
Based on available data, the classification criteria are not met.

Aspiration hazard

Assessment/classification
Study technically not feasible.

11.2 Information on other hazards

No data available

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity

	Effective dose	Method,Evaluation	Source, Remark
Acute (short-term) fish toxicity	LC50: 322.74 mg/L Species freshwater fish Test duration 96 h	QSAR	
Chronic (long-term) fish toxicity	not determined		
Acute (short-term) toxicity to crustacea	EC50 58 mg/L Species Daphnia magna (Big water flea) Test duration 48 h	EU Method C.2	
Chronic (long-term) toxicity to aquatic invertebrate	not determined		
Acute (short-term) toxicity to algae and cyanobacteria	EC50 118 mg/L Species Scenedesmus subspicatus Test duration 72 h	EU Method C.3	

	Effective dose	Method,Evaluation	Source, Remark
Chronic (long-term) toxicity to aquatic algae and cyanobacteria	not determined		
Toxicity to other aquatic plants/organisms	not determined		
Toxicity to microorganisms	EC10 > 140 mg/L Species Pseudomonas putida Test duration 17 h	DIN 38412 / part 8	cell reproduction

12.2 Persistence and degradability

	Value	Method	Source, Remark
Biodegradation	Degradation rate 0 % Test duration 28 d	OECD 301 D / EU C.4-E	

Assessment/classification
Not readily biodegradable (according to OECD criteria)

12.3 Bioaccumulative potential

Assessment/classification
Based on the n-octanol/water partition coefficient accumulation in organisms is not expected.

12.4 Mobility in soil

	Value	Distribution	Transport type	Method	Remark
Half-life time in fresh water	17.41 L/kg			KOC value	

12.5 Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

12.6 Endocrine disrupting properties

	Effective dose	Method,Evaluation	Source, Remark
Endocrine disrupting properties			See section 2.3

12.7 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste codes/waste designations according to EWC/AVV

Waste code product	Waste name
160504 *	gases in pressure containers (including halons) containing hazardous substances

Appropriate disposal / Product
Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.
Prevent release to the environment. No disposal via the sewage.

Appropriate disposal / Package
Transportable pressure equipment (empty, residual pressure): Return to supplier / manufacturer.

SECTION 14: Transport information

	Land transport (ADR/RID)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
14.1 UN number or ID number	1037	1037	1037
14.2 UN proper shipping name	ETHYL CHLORIDE	ETHYL CHLORIDE	Ethyl chloride
14.3 Transport hazard class(es)	2	2.1	2.1
14.4 Packing group	-	-	-
14.5 Environmental hazards	No	No	No

14.6 Special precautions for user

The protective measures listed in Sections 6, 7 and 8 of the Safety Data Sheet have to be considered.

14.7 Maritime transport in bulk according to IMO instruments

No carriage in bulk.

Land transport (ADR/RID)

UN number or ID number	1037
UN proper shipping name	ETHYL CHLORIDE
Transport hazard class(es)	2
Hazard label(s)	2.1
Classification code	2F
Packing group	-
Environmental hazards	No
Limited quantity (LQ)	0
Special provisions	662
Tunnel restriction code	B/D

Sea transport (IMDG)

UN number or ID number	1037
UN proper shipping name	ETHYL CHLORIDE
Transport hazard class(es)	2.1
Packing group	-
Environmental hazards	No
Limited quantity (LQ)	0
Marine pollutant	No
EmS	F-D, S-U

Air transport (ICAO-TI / IATA-DGR)

UN number or ID number	1037
UN proper shipping name	Ethyl chloride
Transport hazard class(es)	2.1
Packing group	-
Environmental hazards	No

SECTION 15: Regulatory information

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

EU legislation

Restrictions of occupation
Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.
Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC).

Other regulations (EU)

To follow:
Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), Annex XVII No 28 - 30.
Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), Annex XVII No 40.
Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances.

National and local regulations concerning chemicals shall be observed.

Directive 2010/75/EU on industrial emissions [Industrial Emissions Directive] VOC
VOC-value 99.8 %

15.2 Chemical Safety Assessment

National regulations

For this substance a chemical safety assessment has been carried out.

SECTION 16: Other information

Key literature references and sources for data
Information from our suppliers and data from the "GESTIS Substances Database" and the "Registered Substances" database of the European Chemicals Agency (ECHA) were used to create this safety data sheet.

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

Relevant H- and EUH-phrases (Number and full text)

H220	Extremely flammable gas.
H280	Contains gas under pressure; may explode if heated.
H351	Suspected of causing cancer.
H360FD	May damage fertility. May damage the unborn child.
H412	Harmful to aquatic life with long lasting effects.