

Vinyl chloride

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 Version 11.0 (en)
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*** SECTION 1: Identification of the substance/mixture and of the company/undertaking**

*** 1.1 Product identifier**

Trade name/designation Vinyl chloride
Art-Nr(n). 4100, 70410
Substance name vinyl chloride
Index No 602-023-00-7
EC No 200-831-0
REACH No. 01-2119458772-30
CAS No 75-01-4

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

Sector of uses [SU]

SU3 Industrial uses
 SU8 Manufacture of bulk, large scale chemicals (including petroleum products)

Process categories [PROC]

PROC3 Use in closed batch process (synthesis or formulation)
 PROC15 Use as laboratory reagent

Environmental release categories [ERC]

ERC6c Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article)

Use of the substance/mixture

Basic substance

Uses advised against

Do not use as propellant for aerosols.

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
 Website www.ghc.com

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

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

*** 1.4 Emergency telephone number**

*** 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

Chem. Unst. Gas B, H220

Chem. Unst. Gas B, H231

Press. Gas (Liq.), H280

Carc. 1A, H350

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Hazard statements for physical hazards

H220 Extremely flammable gas.
 H220 Extremely flammable gas.
 H231 May react explosively even in the absence of air at elevated pressure and/or temperature.
 H280 Contains gas under pressure; may explode if heated.

Hazard statements for health hazards

H350 May cause cancer.

* **2.2 Label elements*** **Labelling according to Regulation (EC) No 1272/2008 [CLP]****Hazard pictograms**

GHS02



GHS08

Signal word

Danger

Hazard statements

H220 Extremely flammable gas.
 H231 May react explosively even in the absence of air at elevated pressure and/or temperature.
 H280 Contains gas under pressure; may explode if heated.
 H350 May cause cancer.

* **Precautionary statements**

P201 Obtain special instructions before use.
 P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P308 + P313 IF exposed or concerned: Get medical advice/attention.
 P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
 P381 In case of leakage, eliminate all ignition sources.
 P405 Store locked up.
 P410 + P403 Protect from sunlight. Store in a well-ventilated place.

* **Supplemental hazard information**

EIGA0803 Restricted to professional users.
 EIGA0357 Asphyxiant in high concentrations.
 Please return container with residual pressure.

* **2.3 Other hazards*** **Adverse human health effects and symptoms**

Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.
 The inhalation of gas / vapour in high concentrations may cause cardiac arrhythmia.
 Contact with liquid may cause cold burns/frostbite.

* **Other adverse effects**

The substance/mixture does not contain components identified as having endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in quantities of 0.1% or more.

* **Results of PBT and vPvB assessment**

The substance/mixture does not contain components meeting the PBT/vPvB criteria of the Reach Regulation, Annex XIII, at levels of 0.1% or higher.

* **SECTION 3: Composition / information on ingredients*** **3.1 Substances**

Substance name	vinyl chloride
Index No	602-023-00-7
EC No	200-831-0
REACH No.	01-2119458772-30
CAS No	75-01-4
ATE	ATE(oral): > 4000 mg/kg ATE(inhalation gas): 390 mg/L

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Additional information

Content: >= 99,8 %

Remark

With stabilizer.

3.2 Mixtures

not applicable

*** SECTION 4: First aid measures**

*** 4.1 Description of first aid measures**

*

General information

Remove contaminated, saturated clothing immediately.
In the event of persistent symptoms obtain medical treatment.
First aider: Pay attention to self-protection!

Following inhalation

Remove the casualty into fresh air, keep warm and allow to rest.
In the event of pulmonary irritation treat initially with corticoid spray, e.g. Ventolair- or Pulmicort- metered-dose aerosol (Ventolair and Pulmicort are registered trademarks).
In case of respiratory standstill give artificial respiration by respiratory bag (Ambu bag) or respirator. Obtain medical assistance.

*

Following skin contact

Take off immediately all contaminated clothing.
In case of skin contact rinse with warm water.
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

Impairment of vision
Headache
Dizziness
Cardiac arrhythmias

*

Effects

Pulmonary oedema

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

*

Notes for the doctor

Treat symptomatically.
Pulmonary oedema prophylaxis.

*** SECTION 5: Firefighting measures**

*** 5.1 Extinguishing media**

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Suitable extinguishing media

Water spray jet
Foam
Extinguishing powder

Unsuitable extinguishing media

Carbon dioxide (CO₂)
Full water jet

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

- * **Hazardous combustion products**
In case of fire formation of dangerous gases possible.
Carbon monoxide
Carbon dioxide (CO₂)
Hydrogen chloride (HCl)
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.
Dispose of fire residues and contaminated extinguishing water in accordance with local, official 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).
Limit expansion of the gas (water spray jet).
- * **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**

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*** 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.
 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.
- * 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**

Exposure scenarios (ES) see annex to this safety data sheet.

*** SECTION 8: Exposure controls/personal protection***** 8.1 Control parameters***** Occupational exposure limit values**

CAS No	EC No	Substance name	occupational exposure limit value
75-01-4	200-831-0	Vinyl chloride	1 [ml/m ³ (ppm)] 2,6 [mg/m ³] (IE)

*** DNEL worker**

CAS No	Substance name	DNEL value	DNEL type	Remark
75-01-4	vinyl chloride	7.7 mg/m ³	long-term inhalative (systemic)	

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* **DNEL Consumer**

CAS No	Substance name	DNEL value	DNEL type	Remark
75-01-4	vinyl chloride	0.0014 µg/kg bw/day	Long-term – oral, systemic effects	
75-01-4	vinyl chloride	0.002 mg/m³	long-term inhalative (systemic)	

* **PNEC**

CAS No	Substance name	PNEC Value	PNEC type	Remark
75-01-4	vinyl chloride	0.077 mg/L	aquatic, freshwater	Assessment factor 1000, assessment factor.
75-01-4	vinyl chloride	0.77 mg/L	aquatic, intermittent release	
75-01-4	vinyl chloride	0.008 mg/L	aquatic, marine water	Assessment factor 10000, assessment factor.
75-01-4	vinyl chloride	43.3 µg/kg	Secondary Poisoning	Assessment factor 30
75-01-4	vinyl chloride	0.708 mg/kg dw	sediment, freshwater	
75-01-4	vinyl chloride	0.071 mg/kg dw	sediment, marine water	
75-01-4	vinyl chloride	0.4 mg/L	sewage treatment plant (STP)	Assessment factor 100, assessment factor.
75-01-4	vinyl chloride	0.103 mg/kg dw	soil	

* **8.2 Exposure controls****Appropriate engineering controls****Technical measures to prevent exposure**

Transfer and handle only in enclosed systems.

* **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 [type, thickness, permeation time/life]: FKM, >= 0,7 mm, > 480 min

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.

Short term: filter apparatus, filter AX

* **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**

Refrigerated liquefied gas

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Colour
colourless

Odour
sweetish

Safety relevant basis data

	Value	Method	Source, Remark
Odour threshold:			not determined
Melting point/freezing point			not applicable
Boiling point or initial boiling point and boiling range	-13.4 °C		
flammability			Extremely flammable gas (H220).
Lower and upper explosion limit	Upper explosion limit 31 Vol-%		
Lower and upper explosion limit	Lower explosion limit 3.8 Vol-%		
Flash point			not applicable
Auto-ignition temperature	415 °C		
Decomposition temperature			not determined
pH			not applicable
Viscosity			not applicable
Solubility(ies)	Water solubility 1.1 g/L (20°C)		
Partition coefficient n-octanol/water (log value)	1.52		
Vapour pressure	3343 hPa (20°C)		
Density and/or relative density			not applicable
Relative vapour density	2.16		air = 1
particle characteristics	not determined		

* **9.2 Other information*** **Information with regard to physical hazard classes*** **Gases under pressure****Safety characteristics**

	Value	Method, Result	Source, Remark
Critical temperature	156.5 °C		

* **Other information**
Vapours are heavier than air.

* **SECTION 10: Stability and reactivity*** **10.1 Reactivity**

See section "Possibility of hazardous reactions".
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.

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*** 10.3 Possibility of hazardous reactions**

Reactions with numerous chemical compounds.
Reactions with oxidising agents.
Reactions with alkali metals.
Reactions with earth alkali metals.
Reactions with impurities.

*** 10.4 Conditions to avoid**

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

*** 10.5 Incompatible materials**

Acetylene
Oxygen
Hydrogen sulfide
Aluminium / Aluminium alloys.

10.6 Hazardous decomposition products

When handled and stored appropriately, no dangerous decomposition products are known.

*** 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	CAS No75-01-4 vinyl chloride LD50: > 4000 mg/kg Species Rat		
Acute dermal toxicity			
Acute inhalation toxicity	CAS No75-01-4 vinyl chloride Acute inhalation toxicity (gas) LC50: 390 mg/L Species Rat Exposure time 2 h		

*** Skin corrosion/irritation***** Other information**

Study technically not feasible.

*** Serious eye damage/irritation***** Other information**

Study technically not feasible.

*** Sensitisation to the respiratory tract***** Assessment/classification**

No data available

*** Skin sensitisation***** Other information**

Study technically not feasible.

*** Germ cell mutagenicity**

	Value	Method	Result / Evaluation	Remark
In vitro mutagenicity/genotoxicity	Species Hamster cells		positive	

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	Value	Method	Result / Evaluation	Remark
In vivo mutagenicity/genotoxicity	Species Mouse		negative	

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

* **Carcinogenicity****Animal data**

	Value	Method	Result / Evaluation	Remark
Carcinogenicity	50 ppm Species Rat		Indications of carcinogenic effects are available from long-term trials.	LOAEC

- * **Assessment/classification**
 May cause cancer.

* **Reproductive toxicity**

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

* **STOT-single exposure*** **STOT SE 1 and 2**

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

* **STOT SE 3*** **Narcotic effects**

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

* **STOT-repeated exposure*** **Animal data**

	Effective dose	Method	Specific effects:	Organs affected:	Source, Remark
Oral specific target organ toxicity (repeated exposure)	NOAEL(C): 30 mg/kg Species Rat				
Inhalative specific target organ toxicity (repeated exposure)	LOAEL(C): 50 ppm Species Rat				

- * **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* **Other information**

Liver damage is possible.

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*** SECTION 12: Ecological information***** 12.1 Toxicity****Aquatic toxicity**

	Effective dose	Method, Evaluation	Source, Remark
Acute (short-term) fish toxicity	LC50: 210 mg/L Species Danio rerio Test duration 96 h	OECD 203	
Chronic (long-term) fish toxicity	not determined		
Acute (short-term) toxicity to crustacea	LC50 approx. 119 mg/L	QSAR	
Chronic (long-term) toxicity to aquatic invertebrate	not determined		
Acute (short-term) toxicity to algae and cyanobacteria	EC50 77 mg/L	QSAR	
Chronic (long-term) toxicity to aquatic algae and cyanobacteria	not determined		
Toxicity to other aquatic plants/organisms	not determined		
Toxicity to microorganisms	EC50 40 mg/L Species activated sludge Test duration 84 h		

*** 12.2 Persistence and degradability**

	Value	Method	Source, Remark
Biodegradation	Degradation rate 16 % Test duration 28 d	OECD 301	

*** 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**

Assessment/classification
 High mobility
 Adsorption in soil is not likely.

*** 12.5 Results of PBT and vPvB assessment**

The substance/mixture does not contain components meeting the PBT/vPvB criteria of the Reach Regulation, Annex XIII, at levels of 0.1% or higher.

*** 12.6 Endocrine disrupting properties**

No data available

*** 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.

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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	UN 1086	UN 1086	UN 1086
14.2 UN proper shipping name	VINYL CHLORIDE, STABILIZED	VINYL CHLORIDE, STABILIZED	Vinyl chloride, stabilized
14.3 Transport hazard class(es)	2.1	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	UN 1086
UN proper shipping name	VINYL CHLORIDE, STABILIZED
Transport hazard class(es)	2.1
Hazard label(s)	2.1
Classification code	2F
Packing group	-
Environmental hazards	No
Limited quantity (LQ)	0
Special provisions	386, 662, 676
Tunnel restriction code	B/D

*** Sea transport (IMDG)**

UN number or ID number	UN 1086
UN proper shipping name	VINYL CHLORIDE, STABILIZED
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	UN 1086
UN proper shipping name	Vinyl chloride, stabilized
Transport hazard class(es)	2.1
Packing group	-
Environmental hazards	No

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*** 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 2.
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 $\geq 99\%$

15.2 Chemical Safety Assessment

*** National regulations**

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

*** SECTION 16: Other information**

*** Abbreviations and acronyms**

Flam. Gas 1A: Flammable gas, Category 1A
Press. Gas (Liq.): Liquefied gas (LG)
Carc. 1A: Carcinogen, Category 1A
Chem. Unst. Gas B: Chemically unstable gas, Category B

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.
H220 H231 Extremely flammable gas.
H280 Contains gas under pressure; may explode if heated.
H350 May cause cancer.

Indication of changes

* Data changed compared with the previous version

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Annex: Exposure scenarios

ES1	PVC production; industrial
	<p>1. Processes and activities covered by this description</p> <p>This exposure scenario covers the production of PVC using different techniques like suspension polymerization (S-PVC), mass polymerization (M-PVC) or emulsion polymerization (E-PVC). The conditions of this exposure scenario are also applicable for the handling as chemical intermediate in the synthesis of other chemicals under strictly controlled conditions (SCC).</p> <p>Relevant use descriptors for this scenario:</p> <p>SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites ERC6c: Industrial use of monomers for manufacture of thermoplastics PROC3: Use in closed batch process (synthesis or formulation); PROC15: Use as laboratory reagent SU8: Manufacture of bulk, large scale chemicals (including petroleum products)</p> <p>Concentration of substance in preparation/mixture or article:</p> <p>The exposure scenario is based on the following ingredients: Vinyl chloride</p> <p>Relevant substance concentrations are given in the contributing scenarios. Unless otherwise stated, values in the exposure scenarios are related to the following substances, and not to the complete product.</p> <p>2. Exposure scenarios</p> <p>2.1 Contributing scenario controlling environmental exposure: ERC6c</p> <p>Concentration of substance in preparation/mixture or article:</p> <p><=100% Vinyl chloride</p> <p>Amounts used:</p> <p>Annual amount per site : 400000 t/a Amount per site : 1110 t/d</p> <p>Duration and frequency of use:</p> <p>Environment..... : 365 days/year</p> <p>Environment factors not influenced by risk management:</p> <p>Receiving Surface Water (Flow Rate): 18.000 m³/day Dilution factor (river)..... : 40 Dilution factor (coastal areas) : 100</p> <p>Risk management measures related to the environment:</p> <p>Air : The concentration of the substance in the reaction product has to be reduced as much as possible by appropriate design of the stripping column. The condensate is transferred to a water stripper or other facilities, to recover contained substance.</p> <p>Water : As far as possible, water flows should be collected in closed collection systems to be processed in the water stripper, in order to remove residual substance.</p> <p>Conditions and measures related to sewage treatment plant:</p> <p>STP type : default industrial size WWTP STP effluent : 2.000 m³/day Sludge treatment..... : Recovery of sewage sludge is assumed.</p> <p>Conditions and measures related to external treatment of waste for disposal:</p> <p>Waste from reactor cleaning containing more than 0.1% of the substance have to be treated as hazardous waste and disposed of accordingly.</p>

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Annex: Exposure scenarios

2.2 Contributing scenario controlling worker exposure:

PROC3

Concentration of substance in preparation/mixture or article:

<=100% Vinyl chloride

Physical state during application:

gas

Vapour pressure : 3330 hPa

Amounts used:

Not of relevance.

Duration and frequency of use:

Exposure time : > 4 h

Other given operational conditions affecting worker exposure:

Temperature : Operation is carried out at elevated temperature (> 20°C above ambient temperature)

Risk management measures related to human health (worker):

Handle substance within a predominantly closed system provided with extract ventilation. Drain down and flush system prior to equipment break-in or maintenance.

Clear transfer lines prior to de-coupling. Drain or remove substance from equipment prior to break.in or maintenance.

Wear a full face respirator conforming to EN140 with Type AX filter or better. In case of long or strong exposure: Wear a self-contained, positive-pressure respirator with full facepiece and an APF of 2000.

2.3 Contributing scenario controlling worker exposure:

PROC15

Concentration of substance in preparation/mixture or article:

<=100% Vinyl chloride

Physical state during application:

gas

Vapour pressure : 3330 hPa

Amounts used:

Not of relevance.

Duration and frequency of use:

Exposure time : > 4 h

Risk management measures related to human health (worker):

Handle substance within a predominantly closed system provided with extract ventilation. Drain down and flush system prior to equipment break-in or maintenance.

Handle in a fume cupboard or under extract ventilation. Sample via closed loop or other system to avoid exposure.

Wear a full face respirator conforming to EN140 with Type AX filter or better. In case of long or strong exposure: Wear a self-contained, positive-pressure respirator with full facepiece and an APF of 2000.

Vinylchlorid

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Annex: Exposure scenarios**3. Exposure estimation and reference to its source**

DNEL and PNEC values of relevant ingredients are given in section 8 of the main part of this document.

Small numeric values in the scenario may be rounded for technical reasons.

Unless otherwise specified in the scenario, default parameters of the methods and conditions have been used.

For each type of exposure usually only the most critical value is given, without differentiation between, e.g., short term and long term exposure.

For a complete exposure estimation, the values for different routes of exposure and activities may have to be summed up.

RCR = Risk Characterization Ratio

Exposure type	Specific conditions	Level of exposure	RCR	Method
freshwater	-	0.0365 mg/l	0.475	EUSES 2.1.1
marine water	-	0.00365 mg/l	0.475	EUSES 2.1.1
Sediment (freshwater)	-	0.336 mg/l	0.475	EUSES 2.1.1
Sediment (marine water)	-	0.0336 mg/l	0.475	EUSES 2.1.1
Soil	-	0.042 mg/l	0.408	EUSES 2.1.1
sewage treatment plant	-	0.365 mg/l	0.91	EUSES 2.1.1
by inhalation	PROC 3.	2.86 mg/m ³	0.37	ECETOC TRA
by inhalation	PROC 15.	2.87 mg/m ³	0.37	ECETOC TRA

4. Evaluation guidance to downstream user

no data available .

- End of Safety Data Sheet -