

**Safety Data Sheet according to Regulation (EC)  
No. 1907/2006 (REACH)**

Printed 30.07.2018  
Revision 27.07.2018 (GB) Version 11.0

**Propene**

3500, 3506, 0068, 70350



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

**1.1. Product identifier**

<b>Name of product</b>	Propene Art-Nr(n): 3500, 3506, 0068, 70350
<b>Name of substance</b>	propene
<b>Index No</b>	601-011-00-9
<b>EC No</b>	204-062-1
<b>REACH registration number</b>	01-2119447103-50
<b>CAS No</b>	115-07-1

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

**Identified uses**

**! Remark**

Restricted to professional users.

**Recommended intended purpose(s)**

Fuel gas.  
Basic substance.  
Refrigerant (R-1270)

**1.3. Details of the supplier of the safety data sheet**

<b>Manufacturer/distributor</b>	GHC Gerling, Holz & Co. Handels GmbH Ruhrstraße 113, D-22761 Hamburg Phone +49 40 853 123-0, Fax +49 40 853 123-66 E-Mail hamburg@ghc.de Internet www.ghc.com
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<b>Advice</b>	GHC Gerling, Holz & Co. Handels GmbH Phone +49 40 853 123-0 Fax +49 40 853 123-66 E-mail (competent person): msds@ghc.de
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**1.4. Emergency telephone number**

<b>Emergency advice</b>	Giftinformationszentrum (Poison Control Centre) Mainz Phone +49 6131 19240
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**SECTION 2: Hazards identification**

**2.1. Classification of the substance or mixture**

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

Hazard classes and Hazard categories	Hazard Statements	Classification procedure
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<b>Flam. Gas 1</b>	<b>H220</b>
<b>Liquef. Gas</b>	<b>H280</b>

**Hazard statements for physical hazards**

<b>H220</b>	<b>Extremely flammable gas.</b>
<b>H280</b>	<b>Contains gas under pressure; may explode if heated.</b>

**2.2. Label elements**

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



GHS02



GHS04

**Signal word**  
Danger

**Hazard statements for physical hazards**

H220 **Extremely flammable gas.**  
H280 **Contains gas under pressure; may explode if heated.**

**Precautionary Statements**

**Prevention**

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

**Response**

P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
P381 In case of leakage, eliminate all ignition sources.

**Storage**

P403 Store in a well-ventilated place.

**Hazardous ingredients for labeling**

propene

**2.3. Other hazards**

**Adverse physicochemical effects**

In the case of insufficient ventilation and/or through the formation of a explosive/highly flammable mixture is possible.

**Adverse human health effects and symptoms**

Contact with liquid may cause cold burns/frostbite.  
Asphyxiant in high concentrations.

**! Information pertaining to special dangers for human and environment**

Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.  
Receptacle under pressure.

**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**

**! Description**

Content: > 99 %

**CAS No 115-07-1**

**propene**

EC No 204-062-1

Index No 601-011-00-9

REACH registration number 01-2119447103-50

**3.2. Mixtures**

not applicable

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**! SECTION 4: First aid measures**

**4.1. Description of first aid measures**

**General information**

Remove contaminated soaked clothing immediately.  
Adhere to personal protective measures when giving first aid.

**In case of inhalation**

Remove the casualty into fresh air and keep him immobile.  
Seek medical treatment immediately.  
In case of respiratory standstill give artificial respiration by respiratory bag (Ambu bag) or respirator. Send for a doctor.

**! In case of skin contact**

In case of contact with skin wash off with warm water.  
In case of frostbite rinse with plenty of water. Don't remove clothing.  
In case of frostbite spray with lukewarm (not hot) water for at least 15 minutes. Do not remove clothing frozen to the skin. Thaw it with lukewarm water. Apply a sterile dressing. Obtain medical assistance.

**! In case of eye contact**

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
Call for a doctor immediately.

**In case of ingestion**

Ingestion is not considered a potential route of exposure.

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

**Physician's information / possible symptoms**

The following symptoms may occur in case of strong exposition:

Unconsciousness  
Shortness of breath  
Headache  
Nausea  
Confusion  
Dizziness  
Contact with liquid may cause cold burns/frostbite.

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

**Treatment (Advice to doctor)**

Treat symptoms.  
Monitor circulation.

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**! SECTION 5: Firefighting measures**

**5.1. Extinguishing media**

**! Suitable extinguishing media**

Alcohol-resistant foam  
Dry powder  
Carbon dioxide  
Water spray jet

**Unsuitable extinguishing media**

Full water jet

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

In case of fire formation of dangerous gases possible.  
Formation of explosive gas mixtures in air.  
In the event of fire the following can be released:  
Carbon monoxide (CO)  
Carbon dioxide (CO<sub>2</sub>)

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**5.3. Advice for firefighters**

**Special protective equipment for fire-fighters**

Use breathing apparatus with independent air supply ( isolated ).

Wear full protective clothing.

**! Additional information**

Cool endangered containers with water spray jet.

Exposure to fire may cause containers to rupture / explode.

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.

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**! SECTION 6: Accidental release measures**

**6.1. Personal precautions, protective equipment and emergency procedures**

**! For non-emergency personnel**

Evacuate area.

Keep people away and stay on the upwind side.

Keep away sources of ignition.

**! For emergency responders**

Remove persons to safety.

Keep area evacuated and free from ignition sources until any spilled liquid has evaporated. (Ground free from frost).

Personal protection by wearing close-fitting protective clothing and breathing apparatus.

Eliminate all ignition sources if safe to do so.

**6.2. Environmental precautions**

If possible, stop flow of product.

Do not discharge into the drains/surface waters/groundwater.

Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.

If necessary, secure leaky pressure receptacles in a salvage packaging.

Do not discharge into the subsoil/soil.

**6.3. Methods and material for containment and cleaning up**

Ensure adequate air ventilation.

Allow to vaporise.

**6.4. Reference to other sections**

Safe handling: see section 7

Disposal: see section 13

Personal protection equipment: see section 8

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**! SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**

**! Advice on safe handling**

Use only in thoroughly ventilated areas.

Transfer and handle only in enclosed systems.

Containers' temperature may not be increased above 50 °C.

Do not heat with open flames.

The working pressure in the receptacle must not exceed the saturation vapour pressure of the pure product resulting at a temperature of 50 °C.

Take measures against electrostatically charging.

Barrels and installations thoroughly earthing (grounding ).

Use antistatic tools.

Provide good room ventilation even at ground level (vapours are heavier than air).

Prevent cylinders from falling over.

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Avoid release to the environment.  
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 backfeed into the container.  
Suck back 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.

**General protective measures**

Do not inhale gases.

**! Hygiene measures**

At work do not eat, drink and smoke.  
Wash hands before breaks and after work.

**! Advice on protection against fire and explosion**

The product is combustible.  
Take precautionary measures against static discharges.  
Formation of explosive gas mixtures in air.  
Do not use sparking tools.  
Pay attention to general rules of internal fire prevention.  
Use only explosion-proof equipment.

**7.2. Conditions for safe storage, including any incompatibilities**

**! Requirements for storage rooms and vessels**

Keep in closed original container.  
Ventilate store-rooms thoroughly.  
Only use containers that are approved specifically for the substance/product.  
Suitable materials: Normalised carbon steel, tempered alloy steel, aluminium alloys, austenitic stainless steels.  
Valve: Suitable materials: Brass, copper alloys, carbon steels, aluminium alloys, austenitic stainless steels.  
Other material details see ISO 11114.  
All regulations and local requirements for the storage of containers have to be respected.

**! Advice on storage compatibility**

Do not store together with spontaneously flammable materials.  
Do not store together with combustible liquids or combustible solids.  
Do not store together with animal feedstuffs.  
Do not store together with explosives.  
Do not store together with infectious substances.  
Do not store together with radioactive material.  
Do not store together with toxic liquids or toxic solids.  
Do not store together with food.  
Do not store together with oxidizing agents.

**! Further information on storage conditions**

Ensure valve protection device is correctly fitted.  
Store only in original container at temperature of 50°C maximum (=122°F).  
Keep container tightly closed and store at cool and aired place.  
Prevent cylinders from falling over.  
Protect of heat.

**7.3. Specific end use(s)**

**! Recommendation(s) for intended use**

No further recommendations.

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

**8.1. Control parameters**

**! Ingredients with occupational exposure limits to be monitored**

CAS No	Name	Code	[mg/m3]	[ppm]	Remark
115-07-1	Propylene	TLV, 8 hours		500	ACGIH, USA

**8.2. Exposure controls**

**! Respiratory protection**

Breathing apparatus in the event of high concentrations.

Keep self contained breathing apparatus readily available for emergency use.

Do not use any filter apparatus.

Respiratory protection complying with EN 137.

In case of rescue and maintenance activities in storage containers use environment-independent breathing apparatus because of risk of suffocation by edging out of air oxygen

**! Hand protection**

Leather gloves

Safety gloves according EN 388

**! Eye protection**

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

**! Other protection measures**

Safety shoes with steel toe.

Body covering work clothing, or chemical resistant suit at increased risk.

**Appropriate engineering controls**

Transfer and handle only in enclosed systems.

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

**9.1. Information on basic physical and chemical properties**

**Appearance**

Gaseous / liquefied under pressure.

**Colour**

colourless

**Odour**

sweetish

**Odour threshold**

40 - 116 mg/m<sup>3</sup>

**Important health, safety and environmental information**

	Value	Temperature	at	Method	Remark
<b>pH value</b>	not applicable				
<b>boiling point</b>	-47,7 °C		1013 hPa		
<b>melting point</b>	-185,3 °C				
<b>Flash point</b>	-108 °C				
<b>Vapourisation rate</b>	not applicable				
<b>Flammable (solid)</b>	not applicable				

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	Value	Temperature	at	Method	Remark
<b>Flammability (gas)</b>	inflammable				
<b>Ignition temperature</b>	485 °C				
<b>Self ignition temperature</b>	455 °C				
<b>Lower explosion limit</b>	1,8 Vol-%				
<b>Upper explosion limit</b>	11,2 Vol-%				
<b>Vapour pressure</b>	10160 hPa	20 °C			
<b>Relative density</b>	1,9138 kg/m <sup>3</sup>	0 °C	1013 mbar		
<b>Vapour density</b>	1,48				air = 1
<b>Solubility in water</b>	384 mg/l	20 °C			
<b>Solubility/other</b>					soluble in organic solvent
<b>Partition coefficient n- octanol/water (log P O/W)</b>	1,77				
<b>Decomposition temperature</b>	not determined				
<b>Viscosity dynamic</b>	not applicable				
<b>Oxidising properties</b>	no				
<b>Explosive properties</b>	no				
<b>9.2. Other information</b>	Vapours are heavier than air.				

**! SECTION 10: Stability and reactivity**

**10.1. Reactivity**

See section "Possibility of hazardous reactions".

**10.2. Chemical stability**

Risk of polymerisation.

**10.3. Possibility of hazardous reactions**

Reactions with numerous chemical compounds.

Formation of explosive gas/air mixtures.

Reactions with strong oxidising agents.

polymerisation

Violent reaction with water at high temperatures.

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**10.4. Conditions to avoid**

Heat sources / heat - risk of bursting.  
Sources of ignition.  
Avoid contact with open flames, glowing metal surfaces, etc..

**10.5. Incompatible materials**

**! Substances to avoid**

Acetylene  
hydrogen bromide (HBr)  
Chlorine  
hydrochloric gas  
Fluorine  
Air  
Oxygen  
Sulphur dioxide (SO<sub>2</sub>)  
Nitrogen oxides (NO<sub>x</sub>)  
Strong oxidizing agents.

**10.6. Hazardous decomposition products**

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

**Thermal decomposition**

Remark No decomposition if used as directed.

**! SECTION 11: Toxicological information**

**11.1. Information on toxicological effects**

**Acute toxicity/Irritation/Sensitization**

	Value/Validation	Species	Method	Remark
<b>LD50 acute oral</b>	Study technically not feasible.			
<b>LD50 acute dermal</b>	Study technically not feasible.			
<b>LC50 acute inhalation</b>	No acute toxicological effects from this product are known.			
<b>Skin irritation</b>	Study technically not feasible.			
<b>Eye irritation</b>	Study technically not feasible.			
<b>Skin sensitization</b>	Study technically not feasible.			
<b>Sensitization respiratory system</b>	not determined			



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**Subacute Toxicity - Carcinogenicity**

	Value	Species	Method	Validation
<b>Subchronic Toxicity</b>	NOAEC 10000 ppm (14 d) Inhalation	Mouse	OECD 413	No effects of toxicological significance.
<b>Mutagenicity</b>				No experimental information on genotoxicity in vitro and in vivo available.
<b>Reproduction-Toxicity</b>				No indications of toxic effects were observed in reproduction studies in animals.
<b>Carcinogenicity</b>				The existing data do not justify a classification as a carcinogen.

**! Specific target organ toxicity (single exposure)**

Substance or mixture is not classified in GHS-criteria as specific target organ toxic with single exposure.

**! Specific target organ toxicity (repeated exposure)**

Substance or mixture is not classified in GHS-criteria as specific target organ toxic with repeated exposure.

**! Aspiration hazard**

not applicable

**Experiences made from practice**

May cause frostbite.  
Gases have a suffocating effect.  
Inhalation causes narcotic effect/intoxication.

**! SECTION 12: Ecological information**

**12.1. Toxicity**

**Ecotoxicological effects**

	Value	Species	Method	Validation
<b>Fish</b>	LC50 51,7 mg/l (96 h)	Fish	QSAR	
<b>Daphnia</b>	EC50 28,2 mg/l (48 h)	Daphnia	QSAR	
<b>Algae</b>	EC50 12,1 mg/l (96 h)	Algae	QSAR	

**12.2. Persistence and degradability**

	Elimination rate	Method of analysis	Method	Validation
<b>Physico-chemical degradability</b>	At normal temperature very highly volatile or gaseous product that can be released to atmosphere. Elimination test cannot be employed.			
<b>Biological degradability</b>	50 % (2,36 d)		QSAR	readily degradable

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**12.3. Bioaccumulative potential**

Because of the n-octanol/water distribution coefficient (log K<sub>ow</sub>) accumulation in organisms is not expected.

**12.4. Mobility in soil**

High mobility  
Adsorption in the soil is not likely.

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

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

**12.6. Other adverse effects**

GWP: 2

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

Waste code No.	Name of waste
16 05 04*	gases in pressure containers (including halons) containing hazardous substances

Wastes marked with an asterisk are considered to be hazardous waste pursuant to Directive 2008/98/EC on hazardous waste.

**Recommendations for the product**

Dispose of as hazardous waste.

**Recommendations for packaging**

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

**SECTION 14: Transport information**

	ADR/RID	IMDG	IATA-DGR
<b>14.1. UN number</b>	1077	1077	1077
<b>14.2. UN proper shipping name</b>	PROPYLENE	PROPYLENE	Propylene
<b>14.3. Transport hazard class(es)</b>	2.1	2.1	2.1
<b>14.4. Packing group</b>	-	-	-
<b>14.5. Environmental hazards</b>	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. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

not applicable  
No transport as bulk according IBC - Code.

**Land and inland navigation transport ADR/RID**

Hazard label(s) 2.1  
tunnel restriction code B/D  
Classification code 2F

**Marine transport IMDG**

Ems: F-D, S-U

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**Air transport ICAO/IATA-DGR**

Cargo aircraft only: Package max. 150 kg.

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**! SECTION 15: Regulatory information**

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

**Other regulations (EU)**

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.

**VOC standard**

**VOC content** >=99 % 20 °C 10160 hPa

**15.2. Chemical Safety Assessment**

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

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

An exposure scenario is not required.

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**! SECTION 16: Other information**

**Recommended uses and restrictions**

National and local regulations concerning chemicals shall be observed.

**Further information**

All declarations of safety-data-sheet refer to pure substance.

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.

Indication of changes: "!" = Data changed compared with the previous version. Previous version: 10.2

**! Sources of key data used**

For the preparation of this safety data sheet, information from our suppliers as well as data from the "database of registered substances" of the European Chemicals Agency (ECHA) were used.

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