We create chemistry

Safety data sheet

1. Substance/preparation and manufacturer/supplier identification

Product name:
2-Propylheptyl Acrylate (2-PHA)

Use: Monomer.

Manufacturer/supplier:
BASF (Thai) Limited
23rd Floor, Emporium Tower, 622, Sukhumvit 24 Rd.,
Klongton, Klongtoey, Bangkok 10110, THAILAND
Telephone: +66 2624-1999
Telefax number: +66 2664-9254
E-mail address: Thailand-SDS-info@basf.com

Emergency information:
International emergency number:
Telephone: +49 180 2273-112

2. Hazard identification

Classification according to UN GHS 2009

Classification of the substance and mixture:
Skin corrosion/irritation: Cat.2
Skin sensitization: Cat.1B
Specific target organ toxicity — single exposure: Cat.3 (irritating to respiratory system)
Hazardous to the aquatic environment - acute: Cat.3
Hazardous to the aquatic environment - chronic: Cat.3

Label elements and precautionary statement:

Pictogram:

Signal Word:
Warning

Hazard Statement:

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H335	May cause respiratory irritation.
H402	Harmful to aquatic life.
H412	Harmful to aquatic life with long lasting effects.

Precautionary Statements (Prevention):

P280	Wear protective gloves.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P272	Contaminated work clothing should not be allowed out of the workplace.
P264	Wash contaminated body parts thoroughly after handling.

Precautionary Statements (Response):

P312	Call a POISON CENTER or physician if you feel unwell.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P303 + P352	IF ON SKIN (or hair): Wash with plenty of soap and water.
P333 + P311	If skin irritation or rash occurs: Call a POISON CENTER or physician.
P332 + P313	If skin irritation occurs: Get medical attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.

Precautionary Statements (Storage):

P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

Precautionary Statements (Disposal):

P501	Dispose of contents and container to hazardous or special waste collection point.

Other hazards which do not result in classification:
If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture. See section 12 - Results of PBT and vPvB assessment.

3. Composition/information on ingredients

Chemical nature

Substance nature: Substance

Isomer blend based on: acrylic ester

2-Propenoic acid, 2-propylheptyl ester

CAS Number: 149021-58-9

Hazardous ingredients

2-Propenoic acid, 2-propylheptyl ester

Content (W/W): >= 84 % - <= 100 %	Skin Corr./Irrit.: Cat. 2
	Skin Sens.: Cat. 1B
CAS Number: 149021-58-9	STOT SE: Cat. 3 (irr. to respiratory syst.)
	Aquatic Acute: Cat. 3
	Aquatic Chronic: Cat. 3

2-propyl heptane-1-ol

Content (W/W): >= 0 % - <= 1 %	Skin Corr./Irrit.: Cat. 2
CAS Number: 10042-59-8	Eye Dam./Irrit.: Cat. 2B
	Aquatic Acute: Cat. 2
	Aquatic Chronic: Cat. 3

4. First-Aid Measures

General advice:
First aid personnel should pay attention to their own safety. If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position). Immediately remove contaminated clothing.

If inhaled:
Keep patient calm, remove to fresh air, seek medical attention.

On skin contact:
Wash thoroughly with soap and water

On contact with eyes:
Wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:
Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

Note to physician:
Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11., (Further) symptoms and / or effects are not known so far
Hazards: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11. (Further) symptoms and / or effects are not known so far
Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire-Fighting Measures

Suitable extinguishing media:

dry powder, water spray, carbon dioxide, foam

Unsuitable extinguishing media for safety reasons:
water jet

Additional information:
Use extinguishing measures to suit surroundings.

Specific hazards:
Self-polymerization if overheated in a container. Cool endangered containers with water-spray.

The product is combustible. See SDS section 7 - Handling and storage.

Special protective equipment:
Wear a self-contained breathing apparatus. Special protective equipment for firefighters

Further information:
Extend fire extinguishing measures to the surroundings. Fight fire from maximum distance. Vapours are heavier than air and may accumulate in low areas and travel a considerable distance up to the source of ignition.

Further information:
In case of a fire in the vicinity a restabilization system should be used if the temperature in the bulk storage-tank reaches 45°C. Evacuate area of all unnecessary personnel. In case of a fire in the vicinity evacuate all personnel in a greater area if the temperature in the bulk storage-tank reaches 60°C.

Further information:
Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

6. Accidental Release Measures

Personal precautions:
Handle in accordance with good industrial hygiene and safety practice.

Avoid all sources of ignition: heat, sparks, open flame.Use antistatic tools.

Environmental precautions:
Discharge into the environment must be avoided.Collect contaminated washing water for appropriate disposal.

Methods for cleaning up or taking up:
For large amounts: Pump off product.
Spills should be contained, solidified, and placed in suitable containers for disposal. Dispose of absorbed material in accordance with regulations. Ensure adequate ventilation. Suppress gases/vapours/mists with water spray jet. Clean contaminated floors and objects thoroughly with water and detergents, observing environmental regulations. Cleaning operations should be carried out only while wearing breathing apparatus. Pick up with suitable appliance and dispose of.

Additional information: High risk of slipping due to leakage/spillage of product.

Release of substance/product can cause fire or explosion. Shut off or stop source of leak. Shut off or stop released substance/product under safe conditions.

Pack in tightly closed containers for disposal.

7. Handling and Storage

Handling

The substance/ product may be handled only by appropriately trained personnel. Facility parts must be checked for polymer residues and cleaned on regular basis in order to avoid hazardous reactions.

Ensure thorough ventilation of stores and work areas. Encapsulation or exhaust ventilation required. Vent waste air to atmosphere only through suitable separators. Check the condition of seals and connector screw threads.

The temperatures which must be avoided are to be considered. Protect against heat. Protect contents from the effects of light. Do not open warm or swollen product containers. Remove persons to safety and alert fire brigade.

Ensure adequate inhibitor and dissolved oxygen level.

Avoid inhalation of dusts/mists/vapours. Avoid aerosol formation. Avoid all direct contact with the substance/product.

Protection against fire and explosion:
Avoid all sources of ignition: heat, sparks, open flame. Ground all transfer equipment properly to prevent electrostatic discharge. It is recommended that all conductive parts of the machinery are grounded.

Heated containers should be cooled to prevent polymerization. If exposed to fire, keep containers cool by spraying with water. Emergency cooling must be provided for the eventuality of a fire in the vicinity.

Storage

Further information on storage conditions: Prior to storage ensure that the transfer equipment used and the intended storage containers do not contain other substances/products. Before transfer to stock the identity of the product must be proved to be without doubt. The entrance to storage rooms is to be granted only to appropriately trained personnel.
The stabilizer is only effective in the presence of oxygen. Maintain contact with atmosphere containing 5 - 21% oxygen. Never use tanks with inert-gas installation for storage.
Risk of polymerization. Protect against heat. Avoid UV-light and other radiation with high energy.
Protect against contamination.
In case of bulk storage, the storage-tanks should at least be equipped with two high temperature alert devices.
Even if the product is stored and handled as prescribed/indicated it should be used up within the indicated duration of storage.

Storage stability:
Storage temperature: < 35 °C
Storage duration: 12 Months
The stated storage temperature should be noted.
Avoid prolonged storage.

This product should be processed as soon as possible.
Ensure adequate inhibitor and dissolved oxygen level.
Do not store with less than 10 % headspace above liquid.
Storage stability is based upon ambient temperatures and conditions described.
It is recommended to keep a safe distance of +2 degrees above the crystallization range.
The product is stabilized, the shelf life should be noted.

8. Exposure controls and personal protection

Components with occupational exposure limits

No substance specific occupational exposure limits known.

Engineering Controls

Advice on system design:
Provide local exhaust ventilation to maintain recommended P.E.L.

Personal protective equipment

Respiratory protection:
Suitable respiratory protection for lower concentrations or short-term effect: Gas filter for gases/vapours of organic compounds (boiling point >65 °C, e. g. EN 14387 Type A)

Hand protection:
Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN ISO 374-1):
fluoroelastomer (FKM) - 0.7 mm coating thickness
nitrile rubber (NBR) - 0.4 mm coating thickness
Manufacturer's directions for use should be observed because of great diversity of types.
Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.

Eye protection:
Safety glasses with side-shields (frame goggles) (e.g. EN 166)

Body protection:
Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

General safety and hygiene measures:
Avoid contact with skin. Avoid inhalation of vapour. Wearing of closed work clothing is required additionally to the stated personal protection equipment.

9. Physical and Chemical Properties

Form:	liquid
Colour:	colourless

Odour:	ester-like	
Odour threshold:	not determined	
pH value:		
	(20 °C) neutral	
Melting temperature:	< -20 °C	
Boiling point:	> 230 °C (approx. 1,013 hPa) Cannot be distilled without decomposition at normal pressure.	(measured)
Flash point:	106.5 °C	(ISO 2719, closed cup)
Evaporation rate:	Value can be approximated from Henry's Law Constant or vapor pressure.	
Flammability (solid/gas):	hardly combustible	(derived from flash point)
Lower explosion limit:	For liquids not relevant for classification and labelling., The lower explosion point may be 5 - 15 °C below the flash point.	
Upper explosion limit:	For liquids not relevant for classification and labelling.	
Ignition temperature:	234 °C	(DIN EN 14522)
Thermal decomposition:	320 kJ/kgAutocatalysed decomposition.	(DSC (DIN 51007))
Self ignition:	Temperature: 20 °C Based on its structural properties the product is not classified as self-igniting.	Test type: Spontaneous self-ignition at room-temperature.
Self heating ability:	not applicable, the product is a liquid	
SADT:	Not a substance/mixture liable to self-decomposition according to GHS.	
Explosion hazard:	Based on the chemical structure there is no indication of explosive properties.	
Fire promoting properties:	Based on its structural properties the product is not classified as oxidizing.	
Vapour pressure:	0.0114 hPa (20 °C) dynamic, Extrapolated value	(measured)
Density:	0.8825 g/cm3 (15 °C)	(other)

	0.8785 g/cm3 (20 °C)	(other)
	0.8732 g/cm3 (25 °C)	(other)
	0.8540 g/cm3 (50 °C)	(other)
Relative density:	0.8785 (20 °C)	
Relative vapour density (air):	> 1 (20 °C) Heavier than air.	(estimated)
Solubility in water:	0.5 mg/l (20 °C)	
Partitioning coefficient n-octanol/water (log Pow):	> 6.5 (23 °C)	(OECD Guideline 117)
Adsorption/water - soil:	KOC: 1194; log KOC: 3.1 Adsorption to solid soil phase is expected.	(calculated)
Volatility/water - air:	The substance will rapidly evaporate into the atmosphere from the water surface.	
Surface tension:	Based on chemical structure, surface activity is not to be expected.	
Viscosity, dynamic:	2.2 mPa.s (25 °C)	(DIN EN ISO 3219)
Viscosity, kinematic:	not determined	
Molar mass:	212.33 g/mol	

10. Stability and Reactivity

Conditions to avoid:
Avoid heat. Avoid oxygen content above the product of less than 5 %. Avoid UV-light and other radiation with high energy. Avoid direct sunlight. Avoid prolonged storage. Avoid inhibitor loss. Avoid excessive temperatures.

Thermal decomposition:	320 kJ/kg (DSC (DIN 51007)) Autocatalysed decomposition.

Substances to avoid:
radical formers, free radical initiators, peroxides, oxidizing agents, reducing agents, strong bases, strong acids
Inert gas

Corrosion to metals: Corrosive effects to metal are not anticipated.

Hazardous reactions:
Ignitable air mixtures can form when the product is heated above the flash point and/or when sprayed or atomized.
Polymerization coupled with heat formation.
Risk of spontaneous polymerization by oxygen depletion of the liquid phase. Risk of spontaneous polymerization when heated or in the presence of UV radiation. Risk of spontaneous and violent self-polymerization if inhibitor is lost or product is exposed to excessive heat.
Reacts with nitric acid. Risk of spontaneous polymerization in the presence of starters for radical chain reactions (e.g. peroxides). Risk of spontaneous polymerization in the presence of oxidizing agents.
Hazardous reactions in presence of mentioned substances to avoid.
The product is stabilized against spontaneous polymerization prior to despatch. The product is stable if stored and handled as prescribed/indicated.

Hazardous decomposition products:
No hazardous decomposition products if stored and handled as prescribed/indicated.

Chemical stability:
The product is stable if stored and handled as prescribed/indicated.

Reactivity:
No hazardous reactions if stored and handled as prescribed/indicated.

11. Toxicological Information

Routes of exposure

Acute oral toxicity

Experimental/calculated data:
LD50rat (oral): > 2,000 mg/kg (OECD Guideline 423)

Acute inhalation toxicity

LC0 rat (by inhalation): 1.19 mg/l 8 h (similar to OECD guideline 403)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. The vapour was tested.

Acute dermal toxicity

LD50 rabbit (dermal): 7,522 mg/kg
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Assessment of acute toxicity

Virtually nontoxic after a single skin contact. Virtually nontoxic by inhalation. Virtually nontoxic after a single ingestion.

Symptoms

Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11.
(Further) symptoms and / or effects are not known so far

Irritation

Assessment of irritating effects:
Skin contact causes irritation. Not irritating to the eyes. The European Union (EU) has classified the substance as "irritating to skin and eyes".

Experimental/calculated data:
Skin corrosion/irritation rabbit: Irritant. (OECD Guideline 404)

Serious eye damage/irritation rabbit: non-irritant (OECD Guideline 405)

Respiratory/Skin sensitization

Assessment of sensitization:
Caused skin sensitization in animal studies.

Experimental/calculated data:
Mouse Local Lymph Node Assay (LLNA) mouse: skin sensitizing (OECD Guideline 429)

Germ cell mutagenicity

Assessment of mutagenicity:
The substance was not mutagenic in bacteria. The substance was not mutagenic in mammalian cell culture. The substance was not mutagenic in studies with mammals. The product has not been fully tested. The statements have been derived in parts from products of a similar structure or composition.

Carcinogenicity

Assessment of carcinogenicity:
The chemical structure does not suggest a specific alert for such an effect.

Reproductive toxicity

Assessment of reproduction toxicity:
The results of animal studies gave no indication of a fertility impairing effect. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Developmental toxicity

Assessment of teratogenicity:
No indications of a developmental toxic / teratogenic effect were seen in animal studies. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Specific target organ toxicity (single exposure)

Causes temporary irritation of the respiratory tract.

Remarks: The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:
The substance may cause damage to the olfactory epithelium after repeated inhalation. After repeated exposure the prominent effect is local irritation. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Aspiration hazard

not applicable

12. Ecological Information

Ecotoxicity

Assessment of aquatic toxicity:
Harmful to aquatic life. Harmful to aquatic life with long lasting effects. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Toxicity to fish:
LC50 (96 h) > 0.31 mg/l, Brachydanio rerio (OECD Guideline 203, static)
The statement of the toxic effect relates to the analytically determined concentration. Limit concentration test only (LIMIT test). No toxic effects occur within the range of solubility.

Aquatic invertebrates:
EC50 (48 h) 161 mg/l, Daphnia magna (OECD Guideline 202, part 1, static)
Nominal concentration. No toxic effects occur within the range of solubility.

Aquatic plants:
EC50 (72 h) 84.9 mg/l (growth rate), Desmodesmus subspicatus (OECD Guideline 201, static)
Nominal concentration. No toxic effects occur within the range of solubility.

EC10 (72 h) 21.8 mg/l (growth rate), Desmodesmus subspicatus (OECD Guideline 201, static)
Nominal concentration. No toxic effects occur within the range of solubility.

Microorganisms/Effect on activated sludge:
EC20 (180 min) 860 mg/l, activated sludge, domestic (OECD Guideline 209, aerobic)
Nominal concentration.

Chronic toxicity to fish:
No data available.

Chronic toxicity to aquatic invertebrates:
No observed effect concentration (21 d), 0.19 mg/l, Daphnia magna (OECD Guideline 202, part 2, Flow through.)
The statement of the toxic effect relates to the analytically determined concentration. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

No observed effect concentration (21 d), 0.136 mg/l, Daphnia magna (OECD Guideline 211, semistatic)
The statement of the toxic effect relates to the analytically determined concentration. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Assessment of terrestrial toxicity:
No data available.

Mobility

Assessment transport between environmental compartments:
The substance will rapidly evaporate into the atmosphere from the water surface.
Adsorption to solid soil phase is expected.

Persistence and degradability

Elimination information:
60 - 70 % BOD of the ThOD (28 d) (OECD 301B; ISO 9439; 92/69/EEC, C.4-C) (aerobic, activated sludge, domestic) Readily biodegradable.

Assessment of stability in water:
In contact with water the substance will hydrolyse slowly.

Information on Stability in Water (Hydrolysis):
$t_{1/2}$ > 360 d (25 °C, pH value 7), (other, pH 7)

Bioaccumulation potential

Assessment bioaccumulation potential:
No data available.
Study scientifically not justified.

Other adverse effects

Adsorbable organically-bound halogen (AOX):
This product contains no organically-bound halogen.

13. Disposal Considerations

Must be sent to a suitable incineration plant, observing local regulations.

Contaminated packaging:
Uncleaned empties should be disposed of in the same manner as the contents.

14. Transport Information

Domestic transport:

	Not classified as a dangerous good under transport regulations
UN number or ID number	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

Sea transport
IMDG

	Not classified as a dangerous good under transport regulations
UN number or ID number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable Marine pollutant: no
Special precautions for user	None known

Air transport
IATA/ICAO

	Not classified as a dangerous good under transport regulations
UN number or ID number	Not applicable
Proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

15. Regulatory Information

Other regulations

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

16. Other Information

This product is of industrial quality and unless otherwise specified or agreed intended exclusively for industrial use.Any other intended applications should be discussed with the manufacturer.Safe Handling and Storage aspects are covered in a brochure which is available on request.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.