

Safety Data Sheet

4-Hydroxybutyl Acrylate (4-HBA)

Revision date : 2025/10/06

Version: 7.0

Page: 1/13

(30041244/SDS_GEN_CA/EN)

1. Identification

Product identifier used on the label

4-Hydroxybutyl Acrylate (4-HBA)

Recommended use of the chemical and restriction on use

Recommended use*: Monomer.

Recommended use*: for industrial use only

Monomer.

Unsuitable for use: Not intended for sale to or use by the general public.

* The "Recommended use" identified for this product is provided solely to comply with a Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

Details of the supplier of the safety data sheet

Company:

BASF Canada Inc.

5025 Creekbank Road

Building A, Floor 2

Mississauga, ON, L4W 0B6, CANADA

Telephone: +1 289 360-1300

Emergency telephone number

24 Hour Emergency Response Information

CHEMTREC: 1-800-424-9300

BASF HOTLINE: (800) 454-COPE (2673)

Other means of identification

Chemical family: acrylates

Synonyms: Not available.

Use: monomer; Raw material

2. Hazards Identification

According to Hazardous Products Regulations (HPR) (SOR/2022-272)

Classification of the product

Acute Tox.

4 (oral)

Acute toxicity

Skin Irrit.

2

Skin irritation

Safety Data Sheet

4-Hydroxybutyl Acrylate (4-HBA)

Revision date: 2025/10/06

Version: 7.0

Page: 2/13

(30041244/SDS_GEN_CA/EN)

Eye Dam.	1	Serious eye damage
Skin Sens.	1	Skin sensitization
Aquatic Acute	3	Hazardous to the aquatic environment - acute

Label elements

Pictogram:



Signal Word:

Danger

Hazard Statement:

H318	Causes serious eye damage.
H315	Causes skin irritation.
H302	Harmful if swallowed.
H317	May cause an allergic skin reaction.
H402	Harmful to aquatic life.

Precautionary Statements (Prevention):

P280	Wear protective gloves and eye protection or face protection.
P261	Avoid breathing mist or vapour or spray.
P273	Avoid release to the environment.
P272	Contaminated work clothing should not be allowed out of the workplace.
P270	Do not eat, drink or smoke when using this product.
P264	Wash contaminated body parts thoroughly after handling.

Precautionary Statements (Response):

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or physician.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P330	Rinse mouth.
P362 + P364	Take off contaminated clothing and wash it before reuse.

Precautionary Statements (Disposal):

P501	Dispose of contents/container in accordance with local regulations.
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Hazards not otherwise classified

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.

Labeling of special preparations (GHS):

Risk of hazardous polymerization under certain conditions (e.g. elevated temperatures, low inhibitor and oxygen concentration). Do not blanket with nitrogen.

Safety Data Sheet

4-Hydroxybutyl Acrylate (4-HBA)

Revision date: 2025/10/06
Version: 7.0

Page: 3/13
(30041244/SDS_GEN_CA/EN)

3. Composition / Information on Ingredients

According to Hazardous Products Regulations (HPR) (SOR/2022-272)

4-hydroxybutyl acrylate

CAS Number: 2478-10-6

Content (W/W): ≥ 80.0 - $\leq 100.0\%$

Synonym: 2-Propenoic acid 4-hydroxybutyl ester; 4-Hydroxybutyl acrylate

1,4-butanediyl diacrylate

CAS Number: 1070-70-8

Content (W/W): ≥ 0.1 - $\leq 1.5\%$

Synonym: 2-Propenoic acid 1,4-butanediyl ester; 1,4-Butanediyl diacrylate

acrylic acid

CAS Number: 79-10-7

Content (W/W): ≥ 0.1 - $\leq 1.0\%$

Synonym: 2-Propenoic acid; Acrylic acid

The actual concentration is withheld as a trade secret.

4. First-Aid Measures

Description of first aid measures

General advice:

Remove contaminated clothing.

If inhaled:

Keep patient calm, remove to fresh air.

If on skin:

Wash thoroughly with soap and water

If in eyes:

Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing.

If swallowed:

Rinse mouth and then drink 200-300 ml of water.

Most important symptoms and effects, both acute and delayed

Symptoms: Overexposure may cause: corneal injury, skin corrosion, severe pain, coughing, respiratory disorders, dyspnea, allergic contact dermatitis, nausea, headache, vomiting, dizziness, diarrhea, abdominal cramps

Indication of any immediate medical attention and special treatment needed

Note to physician

Treatment:

Symptomatic treatment (decontamination, vital functions).

Safety Data Sheet

4-Hydroxybutyl Acrylate (4-HBA)

Revision date: 2025/10/06

Version: 7.0

Page: 4/13

(30041244/SDS_GEN_CA/EN)

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.

Special hazards arising from the substance or mixture

Hazards during fire-fighting:
Risk of violent self-polymerization if overheated in a container. Cool endangered containers with water-spray.

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

Advice for fire-fighters

Protective equipment for fire-fighting:
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.

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.

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

6. Accidental release measures

Further accidental release measures:
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.

Personal precautions, protective equipment and emergency procedures

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.

Safety Data Sheet

4-Hydroxybutyl Acrylate (4-HBA)

Revision date: 2025/10/06

Version: 7.0

Page: 5/13

(30041244/SDS_GEN_CA/EN)

Methods and material for containment and cleaning 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.

7. Handling and Storage

Precautions for safe 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. When filling, transferring, or emptying of containers, adequate local exhaust ventilation is necessary. 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 from direct sunlight. 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. Substance/product can form explosive mixture with air. Ground all transfer equipment properly to prevent electrostatic discharge. It is recommended that all conductive parts of the machinery are grounded. Explosion-proof equipment is not necessary when loading and processing of the product takes place at a minimum of 5 °C below the flash point.

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.

Vapours are heavier than air and may accumulate in low areas and travel a considerable distance up to the source of ignition.

Conditions for safe storage, including any incompatibilities

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. Protect from direct sunlight. 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.

Safety Data Sheet

4-Hydroxybutyl Acrylate (4-HBA)

Revision date: 2025/10/06
Version: 7.0

Page: 6/13
(30041244/SDS_GEN_CA/EN)

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: $\leq 25\text{ }^{\circ}\text{C}$

Storage duration: 6 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.

Check frequently to ensure that stabilizer content is adequate.

The product is stabilized, the shelf life should be noted.

Do not store with less than 10 % headspace above liquid.

Storage stability is based upon ambient temperatures and conditions described.

Storage temperature: $45\text{ }^{\circ}\text{C}$

A restabilization system should be used if the temperature in the bulk storage-tank reaches the indicated value.

Storage temperature: $60\text{ }^{\circ}\text{C}$

All personnel in a greater area should be evacuated if the temperature in the bulk storage-tank reaches the indicated value.

8. Exposure Controls/Personal Protection

Components with occupational exposure limits

acrylic acid	ACGIH, US:	TWA value 2 ppm ;
	ACGIH, US:	Skin Designation ; Danger of cutaneous absorption

Advice on system design:

Ensure adequate ventilation.

Personal protective equipment

Respiratory protection:

Wear a NIOSH-certified (or equivalent) organic vapour/particulate respirator as needed. At concentrations $< 250\text{ ppm}$, use a chemical cartridge respirator. At concentrations $> 250\text{ ppm}$, use an air-supplied or self-contained breathing apparatus.

Hand protection:

Chemical resistant protective gloves

Eye protection:

Tightly fitting safety goggles (chemical goggles).

Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, chemical-protection suit.

General safety and hygiene measures:

Wearing of closed work clothing is required additionally to the stated personal protection equipment. Avoid inhalation of vapour. Avoid contact with the skin, eyes and clothing. Handle in accordance with good industrial hygiene and safety practice.

Safety Data Sheet

4-Hydroxybutyl Acrylate (4-HBA)

Revision date: 2025/10/06

Version: 7.0

Page: 7/13

(30041244/SDS_GEN_CA/EN)

9. Physical and Chemical Properties

Physical state:	liquid	
Form:	liquid	
Odour:	odourless	
Odour threshold:	not determined	
Colour:	colourless	
pH value:	neutral	
Melting point:	-80 °C	
	Literature data.	
Freezing point:		
Boiling point:	236 °C (1,013 hPa)	(measured)
Boiling range:	No data available.	
Flash point:	130 °C	(Unspecified, other)
	Literature data.	
Flammability:	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.	
Autoignition:	335 °C	(Regulation 440/2008/EC, A.15)
SADT:	Not a substance/mixture liable to self-decomposition according to GHS.	
Vapour pressure:	approx. 0.005 hPa (20 °C)	(measured)
Density:	1.0393 g/cm3 (20 °C)	(OECD Guideline 109)
Relative density:	1.0393 (20 °C)	
Relative vapour density:	4.97 (20 °C)	(calculated)
	Heavier than air.	
Partitioning coefficient n-octanol/water (log Pow):	0.77 (25 °C)	(measured)
Self-ignition temperature:	20 °C Based on its structural properties the product is not classified as self-igniting.	
Thermal decomposition:	155 °C, 571 J/g (DSC (OECD 113))	
Viscosity, dynamic:	10.7 mPa.s (20 °C)	(OECD Guideline 114)
Viscosity, kinematic:	10.2 mm2/s (20 °C)	(calculated (from dynamic viscosity))
Solubility in water:	1,000 g/l (20 °C)	
	miscible	
Solubility (qualitative):	miscible	
	solvent(s): organic solvents,	
Molecular weight:	144.17 g/mol	

Safety Data Sheet

4-Hydroxybutyl Acrylate (4-HBA)

Revision date: 2025/10/06

Version: 7.0

Page: 8/13

(30041244/SDS_GEN_CA/EN)

Evaporation rate: Value can be approximated from Henry's Law Constant or vapor pressure.

Particle characteristics

Particle size distribution: The substance / product is marketed or used in a non solid or granular form.

10. Stability and Reactivity

Reactivity

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

Corrosion to metals:

No corrosive effect on metal.

Oxidizing properties:

Based on its structural properties the product is not classified as oxidizing.

Formation of
flammable gases:

Remarks:

Forms no flammable gases in the presence of water.

Chemical stability

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

Possibility of hazardous reactions

Explosion and fire hazard exists under confined conditions. Ignitable air mixtures can form when the product is heated above the flash point and/or when sprayed or atomized. Formation of explosive gas/air mixtures.

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. Polymerization produces gases which may burst closed or confined containers. Reactions may cause ignition.

Risk of spontaneous polymerization in the presence of starters for radical chain reactions (e.g. peroxides). Reacts with nitric acid. 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.

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. Avoid all sources of ignition: heat, sparks, open flame. Avoid freezing. Avoid moisture.

Do not blanket with nitrogen.

Incompatible materials

radical formers, free radical initiators, peroxides, mercaptans, nitro-compounds, perborates, azides, ether, ketones, aldehydes, amines, nitrates, nitrites, oxidizing agents, reducing agents, strong bases, alkaline reactive substances, acid anhydrides, acid chlorides, concentrated mineral acids, metal salts
Inert gas

Safety Data Sheet

4-Hydroxybutyl Acrylate (4-HBA)

Revision date: 2025/10/06
Version: 7.0

Page: 9/13
(30041244/SDS_GEN_CA/EN)

Hazardous decomposition products

Decomposition products:

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

Thermal decomposition:

155 °C, 2.5 K/min (DSC (OECD 113))

11. Toxicological information

Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Acute toxicity

Assessment of acute toxicity: Of moderate toxicity after single ingestion. The inhalation of a highly enriched/saturated vapor-air-mixture represents an unlikely acute hazard. Virtually nontoxic after a single skin contact.

Oral

Type of value: LD50

Species: rat (male/female)

Value: 871 mg/kg (BASF-Test)

Inhalation

Type of value: LC0

Species: rat

Value: 0.17 mg/l (BASF-Test)

Exposure time: 8 h

The vapour was tested.

No mortality within the stated exposition time as shown in animal studies.

Dermal

Type of value: LD50

Species: rat (male/female)

Value: > 2,000 mg/kg (OECD Guideline 402)

Assessment other acute effects

Assessment of STOT single:

Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

Irritation / corrosion

Assessment of irritating effects: Skin contact causes irritation. May cause severe damage to the eyes.

Skin

Species: rabbit

Safety Data Sheet

4-Hydroxybutyl Acrylate (4-HBA)

Revision date: 2025/10/06

Version: 7.0

Page: 10/13
(30041244/SDS_GEN_CA/EN)

Result: Irritant.
Method: BASF-Test

Species: rabbit
Result: Irritant.
Method: OECD Guideline 404

Eye
Species: rabbit
Result: irreversible damage
Method: Draize test

Sensitization
Assessment of sensitization: Sensitization after skin contact possible.

other
Species: In vitro assay
Result: skin sensitizing
Method: In vitro skin sensitization test battery

Aspiration Hazard
not applicable
not applicable

Chronic Toxicity/Effects

Repeated dose toxicity
Assessment of repeated dose toxicity: After repeated exposure the prominent effect is local irritation. The product has not been fully tested. The statements have been derived in parts from products of a similar structure or composition.

Genetic toxicity
Assessment of mutagenicity: The substance was not mutagenic in bacteria. The substance was mutagenic in various cell culture test systems; however, these results could not be confirmed in tests 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: In long-term animal studies in which the substance was given by inhalation, a carcinogenic effect was not observed. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Reproductive toxicity
Assessment of reproduction toxicity: The results of animal studies gave no indication of a fertility impairing effect. The product has not been fully tested. The statements have been derived in parts from products of a similar structure or composition.

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

12. Ecological Information

Toxicity

Safety Data Sheet

4-Hydroxybutyl Acrylate (4-HBA)

Revision date: 2025/10/06

Version: 7.0

Page: 11/13

(30041244/SDS_GEN_CA/EN)

Aquatic toxicity

Assessment of aquatic toxicity:

Acutely harmful for aquatic organisms. 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) approx. 14.66 mg/l, *Leuciscus idus* (DIN 38412 Part 15, static)

The details of the toxic effect relate to the nominal concentration.

Aquatic invertebrates

EC50 (48 h) 23 mg/l, *Daphnia magna* (Directive 79/831/EEC, static)

The details of the toxic effect relate to the nominal concentration.

Aquatic plants

EC50 (72 h) 13.6 mg/l (growth rate), *Scenedesmus subspicatus* (OECD Guideline 201, static)

The details of the toxic effect relate to the nominal concentration.

Chronic toxicity to fish

No data available.

Chronic toxicity to aquatic invertebrates

No data available.

Assessment of terrestrial toxicity

No data available.

Soil living organisms

Toxicity to soil dwelling organisms:

No data available.

Toxicity to terrestrial plants

No data available.

Other terrestrial non-mammals

No data available.

Microorganisms/Effect on activated sludge

Toxicity to microorganisms

DIN EN ISO 8192-OECD 209-88/302/EEC, P. C aerobic activated sludge, domestic/EC50 (0.5 h): > 1,000 mg/l

Nominal concentration.

Persistence and degradability

Assessment biodegradation and elimination (H₂O)

Readily biodegradable (according to OECD criteria).

Elimination information

90 - 100 % DOC reduction (21 d) (OECD 301 A (new version)) (aerobic, activated sludge, domestic, non-adapted)

Safety Data Sheet

4-Hydroxybutyl Acrylate (4-HBA)

Revision date: 2025/10/06

Version: 7.0

Page: 12/13

(30041244/SDS_GEN_CA/EN)

Assessment of stability in water

According to structural properties, hydrolysis is not expected/probable.

Information on Stability in Water (Hydrolysis)

$t_{1/2}$ 1.061 a, 50 % (25 °C, pH value 8), (calculated, other)

Bioaccumulative potential

Assessment bioaccumulation potential

Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

Bioaccumulation potential

No data available.

Mobility in soil

Assessment transport between environmental compartments

The substance will not evaporate into the atmosphere from the water surface.

Adsorption to solid soil phase is not expected.

Additional information

Adsorbable organically-bound halogen(AOX):

This product contains no organically-bound halogen.

13. Disposal considerations

Waste disposal of substance:

Dispose of in accordance with national, state and local regulations. Do not discharge into drains/surface waters/groundwater.

Container disposal:

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

14. Transport Information

Land transport

TDG

Not classified as a dangerous good under transport regulations

Sea transport

IMDG

Not classified as a dangerous good under transport regulations

Air transport

IATA/ICAO

Not classified as a dangerous good under transport regulations

15. Regulatory Information

Safety Data Sheet

4-Hydroxybutyl Acrylate (4-HBA)

Revision date: 2025/10/06

Version: 7.0

Page: 13/13

(30041244/SDS_GEN_CA/EN)

Federal Regulations

Registration status:

Chemical DSL, CA

DSL listed and/or otherwise compliant.

NFPA Hazard codes:

Health: 2 Fire: 1 Reactivity: 2 Special:

Assessment of the hazard classes according to UN GHS criteria (most recent version):

Aquatic Acute	3	Hazardous to the aquatic environment - acute
Acute Tox.	4 (oral)	Acute toxicity
Skin Irrit.	2	Skin irritation
Eye Dam.	1	Serious eye damage
Skin Sens.	1	Skin sensitization

16. Other Information

SDS Prepared by:

BASF NA Product Regulations

SDS Prepared on: 2025/10/06

We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

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.

Date / Revised: 2025/10/06

Date / Previous version: 2023/09/20

Version: 7.0

Previous version: 6.0

END OF DATA SHEET