Section 1. Product and Company Identification

Product Name Hydroxypropyl Acrylate
CAS Number 25584-83-2

Parchem - fine & specialty chemicals
415 Huguenot Street
New Rochelle, NY 10801
(914) 654-6800 **(914) 654-6899**
parchem.com **info@parchem.com**

EMERGENCY RESPONSE NUMBER
CHEMTEL
Toll Free US & Canada: 1 (800) 255-3924
All other Origins: 1 (813) 248-0585
Collect Calls Accepted

Section 2. Hazards Identification

Classification of the substance or mixture
Physical Hazards: None.
Health Hazards
Acute toxicity (oral) - Category 3
Acute toxicity (dermal) - Category 3
Skin corrosion/irritation - Category 1C
Eye damage/irritation - Category 1
Skin sensitization - Category 1
Environmental Hazards: Acute aquatic - Category 2

GHS Label Elements
Pictograms:

Signal word: DANGER

Hazard and precautionary statements
Hazard Statements
Toxic if swallowed. [H301]
Toxic in contact with skin. [H311]
Causes severe skin burns and eye damage. [H314]
May cause an allergic skin reaction. [H317]
Toxic to aquatic life. [H401]

Precautionary Statements - Prevention
Wash hands thoroughly after handling. [P264]
Do not eat, drink, or smoke when using this product. [P270]

Wear protective gloves, protective clothing, eye protection, and face protection. [P280]
Do not breathe fumes, mists, vapors, or spray. [P260]
Contaminated work clothing should not be allowed out of the workplace. [P272]
Avoid release to the environment. [P273]

Precautionary Statements - Response

IF SWALLOWED: Immediately call a POISON CENTER or doctor. [P301+P310]
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. [P301+P330+P331]
For specific treatment, see First Aid section in this SDS. [P321]
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. [P303+P361+P353]
Call a POISON CENTER or doctor if you feel unwell. [P312]
Take off immediately all contaminated clothing and wash it before reuse. [P361+P364]
IN INHALED: Remove person to fresh air and keep comfortable for breathing. [P304+P340]
Immediately call a POISON CENTER or doctor. [P310]
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. [P305+P351+P338]
If skin irritation or rash occurs: Get medical advice or attention. [P333+P313]

Precautionary Statements - Storage

Store locked up. [P405]

Precautionary Statements - Disposal

Dispose of contents/container in accordance with local/regional/national regulations. [P501]

Other Classification and Labeling Information

Hazards Not Otherwise Classified: Hazardous polymerization can occur at elevated temperatures and/or the loss of inhibitor.

Unknown Acute Toxicity: None.

Section 3. Composition / Information on Ingredients

Common Name Hydroxypropyl Acrylate
Synonym(s) HPA; Acrylic acid, hydroxypropyl ester; 1,2-Propanediol monoacrylate
Formula $C_6H_{10}O_3$
CAS Number 25584-83-2

COMPONENT	CAS NUMBER	CONCENTRATION
Hydroxypropyl Acrylate	25584-83-2	≥ 96.0%
Dipropylene Glycol Monoacrylate	N/A	< 3.0%
1,2-Propylene Glycol Diacrylate	25151-33-1	< 0.5%
Acrylic Acid	79-10-7	< 50 ppm
1,2-Propylene Oxide	75-56-9	< 10 ppm
Hydroquinone Methyl Ether (MEHQ)	150-76-5	180 – 220 ppm

Section 4. First Aid Measures

Skin Contact: Wash with plenty of water, then with soap and water for 15 minutes. Seek medical attention if exposed to large quantities, if contact is prolonged, or if exposure causes more than minor discomfort. Discard contaminated clothing and shoes.
Eye Contact: Immediately flush eyes with a continuous water stream for at least 20 minutes. Washing immediately after exposure is expected to be effective in preventing damage to the eyes. Seek medical attention.
Inhalation: If small amounts of this product are inhaled, specific treatment is generally not expected to be necessary. If exposed to excessive levels, if contact is prolonged, or if exposure causes adverse symptoms, move person to fresh air and seek medical attention.
Ingestion: In case of accidental overdose/over-ingestion, seek medical attention or contact a poison control center immediately. Do not induce vomiting. Dilute by giving 1 or 2 glasses of milk or water. Nothing by mouth if unconscious. Seek medical attention.

Most Important Symptoms/Effects: Exposure is expected to cause strong to severe irritation to skin and eyes. Skin contact may result in absorption of possibly toxic amounts and serious dermal effects including burns, allergic reaction, and possibly necrosis. Exposure may cause irritation to the upper respiratory tract, labored breathing, and drowsiness. Ingestion may cause injury to the mouth, throat, or gastrointestinal tract. Ingestion may cause serious injury, possibly death.
Indication of Immediate Medical Attention and Special Treatment: If exposure to this product causes adverse effects, seek immediate medical attention. Conditions should be treated symptomatically.

Section 5. Firefighting Measures

Flash Point
201°F (94°C) [Closed cup]
212°F (100°C) [Open cup]
Flammable Limits: The lower flammable limit is 1.4%. No information is available on the upper flammable limit.

Autoignition Temperature: 308 °C (760 mm Hg)
Explosion Data: No applicable information available.

Suitable Extinguishing Media: Use dry chemical, foam, carbon dioxide, water spray/fog when fighting fires involving this product. For large fires, alcohol resistant foams are preferred. Synthetic or protein foams may be used, but may not be as effective.

Special Protective Equipment and Precautions for Firefighters: Wear a self-contained breathing apparatus pressure demand (NIOSH approved or equivalent) and full protective gear. Toxic vapors may evolve. Fight fires from a safe distance or protected areas. Fire hoses with fog nozzles may be used for controlling fires but care must be exercised not to spread flaming. Use of large volumes of water may produce run-off that is expected to be toxic to aquatic life and/or pose a hazardous waste disposal problem. Water may not be as effective for large fires.

This substance is water-soluble and therefore the use of water during firefighting is expected to be relatively effective. Water will dilute the compound, without the formation of an appreciable surface slick, and is not expected to spread flaming. (This water solubility property does not pertain to most other acrylates/methacrylates.)

Specific Hazards Arising from the Chemical or Mixture: Heat can cause hazardous exothermic polymerization. Sealed containers can explode in the heat of fire. Vapors may travel to ignition source because they are heavier than air. Run off may create an explosion, fire, and environmental hazard.

Hazardous Combustion Products: Thermal decomposition may generate toxic vapors.
Other Information: See Section 7 for further information

Section 6. Accidental Release Measures

Personal Precautions, Protective Equipment, and Emergency Procedures: In case of spill, evacuate the area and remove all ignition sources. Do not expose to heat, flames, or ignition sources during any spill cleanup activities. Wear appropriate personal protective equipment during any cleanup and response activities as described in Section 8.

Methods and Materials for Containment and Clean Up: Dike and contain spill with vermiculite or other absorbent materials such as polyethylene fiber or polypropylene fiber products and sand. Do not use sawdust or clay-based absorbents (e.g., Absorb-n-Dri, Drierite, Millsorb) since they do not sufficiently stabilize the material for safe transport.

Other Instructions: This substance is water-soluble and will not form an appreciable surface slick. Do not release of this product or waste streams containing this product to water or the environment. In the event of an uncontrolled release of this material, the user should determine if the release is reportable under applicable laws and regulations

Section 7. Handling and Storage

Precautions for Safe Handling and Storage: Caution - Hazardous polymerization may cause drums to rupture. Evacuate immediate area. Product undergoing hazardous polymerization is generally evidenced by a warm drum, high drum pressure, and/or bulging drum. If hazardous polymerization is evident, control or slow polymerization by spraying drum with cold water. When polymerization has ended (cold drum), carefully remove drum cap or bung (use blanket to cover cap or bung to prevent splashing) to release excess pressure. Workers conducting such operations should wear personal equipment including eye, face, and hand protection. If the material has not fully polymerized (i.e., not 100% solid), add 1% w/w of phenothiazine (PTZ) to stabilize material for transport and disposal. Properly dispose of both the drum and its contents.
This product contains the inhibitor methyl ether of hydroquinone (MEHQ), at a level of 180 - 220 ppm, which requires oxygen in air in order to be effective. Inhibitor level must be checked monthly in material stored for more than 3 months. Inhibitor must be maintained at original level to prevent

unintended polymerization. Permit air space to exist inside storage containers, however, never use pure nitrogen or oxygen blanketing

Other Precautions and Information: During operations at room temperature, evaporation of the material is expected to occur due to the vapor pressure of the product. During heating operations involving this product, vapors will even more readily evolve or be released. Misting operations at any temperature may result in exposure.
Do not drop. Keep away from fire, heat, open flames, lights, and ignition sources. Wear goggles and gloves when handling. Avoid breathing vapors. Eye-wash stations and emergency showers need to exist in areas where the material is handled, especially areas where loading and unloading operations occur. Wash hands thoroughly after handling and before eating, drinking, or smoking. Keep out of reach of children. Ground all containers when transferring material.
Do not contaminate water, food, or feed by storage or disposal. Keep the product in original containers. Store in cool, dry, well ventilated, low fire risk area away from sunlight. Keep containers closed. Store only in approved containers, under approved conditions. Avoid pressure build-up in containers. An automatic water spray device should be immediately available. A spill control and containment plan should be developed. Storage area should not be subject to rapid temperature changes as such changes may cause increased internal pressure. Isolate from toxic materials or substances that may release corrosive, toxic, or flammable fumes on reaction.

Section 8. Exposure Controls / Personal Protection

Eye/Face Protection: Chemical safety goggles meeting the specifications of ANSI Standard Z87.1 are to be worn whenever there is the possibility of contact with the eyes. Spectacle type safety glasses do not provide satisfactory protection. An eyewash fountain should be readily accessible. Wear plastic face shield in addition to safety goggles where there is a danger of splashing.
Protective Gloves: Wear chemical resistant gloves appropriate to the conditions to prevent dermal exposure. Glove material comparisons indicate that gloves made of polyethylene/polyethylvinyl alcohol/polyethylene (PE/EVAL/PE) laminate are anticipated to afford adequate hand protection. Gloves made of butyl rubber may also be effective, but should be evaluated before use. (Gloves made of nitrile, PVC, or neoprene are not expected to provide adequate hand protection and are not recommended.) Rinse and remove gloves immediately after use, and wash hands thoroughly with soap and water. Gloves should be removed and replaced immediately if there are any signs of degradation or breakthrough.
Protective Clothing: Wear chemical resistant protective clothing and footwear impervious to the product for the duration of the anticipated exposure if there is a potential for skin contact. An emergency shower should be readily accessible. Discard any contaminated clothing.
Respiratory Protection: Wear adequate respiratory protection in the case where there is a potential for inhalation exposure during use or handling operations. Respirators equipped with organic vapor cartridges are anticipated to provide adequate respiratory protection during short-term exposures to low vapor concentrations of the product. Workers should wear a supplied-air respirator or self-contained breathing apparatus any time exposure is above low levels or during extended exposure periods. Use NIOSH approved respiratory equipment. Respirators should be selected based on the form and concentration of the contaminant in the air and in accordance with OSHA (29 CFR 1910.134). Handle only in the presence of adequate ventilation.

Engineering Controls: Good general ventilation should be sufficient to control low airborne levels of the product. If the product is present above low levels, local exhaust or other measures may be necessary to control worker exposure. Engineering controls may be necessary during heating operations where irritating vapors may evolve or be released.
Air Monitoring: HPA may be measured through the use of a partially-validated OSHA method involving adsorption on a charcoal tube (100/50 mg sections) coated with 10% 4-t-butylcatechol. Followed by desorption with methylene chloride:methanol (95:5) and GC/FID analysis. The maximum volume and flow rate are 10 liters and 0.1 liters/minute, respectively.

Exposure Limits and Guidelines

Component	OSHA PEL	ACGIH TLV	NIOSH REL	Other
Hydroxypropyl Acrylate	N/A	0.5 ppm TWA [skin; sensitizer]	0.5 ppm [skin]	N/A
Dipropylene glycol monoacrylate	N/A	N/A	N/A	N/A
1,2-Propylene glycol diacrylate	N/A	N/A	N/A	N/A
Acrylic acid	N/A	2 ppm TWA [skin]	2 ppm TWA	N/A
1,2-Propylene Oxide		2 ppm TWA [sensitizer]	N/A	N/A
Hydroquinone methyl ether (MEHQ)[2]	N/A	5 mg/m^3 TWA	5 mg/m^3 TWA	N/A

Section 9. Physical and Chemical Properties

Appearance/Physical State: Clear colorless liquid
Odor: Ester odor
Odor Threshold: No applicable information available
pH: No applicable information available
Melting Point/Freezing Point: < -60 °C
Boiling Point: 210°C (760 mm Hg)
Boiling Point: 77°C (5 mm Hg)
Flash Point: 201°F (94 °C) [closed cup]
Flash Point: 212°F (100 °C) [open cup]
Evaporation Rate: No applicable information available
Flammability: No applicable information available
Flammability Limits: The lower flammable limit is 1.4%. No information is available on the upper flammable limit.
Vapor Pressure: 0.16 mm Hg (25 °C)
Vapor Pressure: 90.2 mm Hg (135 °C)
Vapor Density: 4.5 (air = 1)

Relative Density/Specific Gravity: 1.0536 (20°C/4°C)
Solubility in Water: Soluble
Octanol/Water Partition Coefficient: 0.2
Autoignition Temperature: 308 °C (760 mm Hg)
Decomposition Temperature: No applicable information available
Viscosity: 8.06 cps (28°C)
Color (APHA): 50 (max.)
Tg of Homopolymer: -7°C
Refractive Index: 1.4443 (20°C)
Volatile: 100%

Section 10. Stability and Reactivity

Reactivity: There are no specific reactivity hazards. See Hazardous Polymerization subsection below.
Chemical Stability: Stable under normal conditions when properly inhibited.
Possibility of Hazardous Reactions: Hazardous reactions are not expected under normal conditions when properly inhibited.
Conditions to Avoid: Avoid heat, fire, open flames, direct light, ignition sources, and UV radiation.
Incompatible Materials: Incompatible with free-radical initiators, oxidizing and reducing agents, and free iron or rust.
Hazardous Decomposition Products: Hazardous decomposition or byproducts are not expected under normal conditions.

Hazardous Polymerization: Hazardous polymerization can occur, particularly at elevated temperatures, or upon loss of the inhibitor and may result in the release of hazardous decomposition products and vapors.
Conditions to Avoid Hazardous Polymerization: Avoid free radical initiators, and oxidizing and reducing agents. Also avoid excessive heat, open flames, UV radiation, and ignition sources. Store product with inhibitor.
Other Information: See Section 7 for further information.

Section 11. Toxicological Information

Routes of Exposure: Exposure to HPA (including its vapors) may occur through the eyes, skin, ingestion, and inhalation.
Acute Toxicological Data: Acute oral LD50: 300 - 500 mg/kg (rat)
Acute dermal LD50: 200- 300 mg/kg (rabbit)
Other Acute Toxicological Data: In an acute inhalation study conducted in 1967, rats were exposed to 0.833 mg/l (156 ppm) of HPA vapors for 8 hours. No deaths were reported.
Eye Irritation Data: In eye irritation testing, 0.005 ml of undiluted HPA caused severe corneal necrosis while an excess (0.5 ml) of a 15 % solution in propylene glycol caused moderate injury. Only traces of diffuse corneal necrosis resulted from instillation of a 5 % solution. Eye irritation was graded 7 out of 10.

Skin Irritation/Sensitization/ Absorption Data: In skin irritation testing, rabbits exposed to 0.5 ml of undiluted HPA applied to the clipped intact skin and covered. Animals developed marked necrosis. The substance was considered to be corrosive.
In limited testing, HPA was found to produce skin sensitization.
Subchronic Toxicity Data: In one-month inhalation studies in several species, dogs and rabbits showed signs of nasal irritation at 5 or 10 ppm; rats and mice showed eye irritation at 10 ppm. Effects in the most sensitive species (dogs) included inflammation of the respiratory tract at 10 ppm. Changes in body weight, thymus, lymphoid tissues, and reproductive organs were thought to be stress mediated and secondary to respiratory irritation.
Reproductive Toxicity Data: There are no reproductive toxicity data available on HPA
Teratogenicity (birth defects) Data: The developmental toxicity of HPA was evaluated in rats after inhalation exposure for 6 hours per day during gestation days 6 to 20 at concentrations of 1, 5, or 10 ppm. No treatment-related increases in embryo or fetal mortality or fetal malformations were observed after exposure. While signs of maternal toxicity were observed after exposure, no significant developmental toxic effects were observed. These results indicate that the substance is not selectively toxic to the embryo or fetus. The NOAEL for developmental toxicity was found to be greater than 10 ppm.
Mutagenicity Data (in vitro): HPA has produced equivocal results in the in vitro bacterial reverse mutation assay (Ames test). The methacrylate analog, hydroxypropyl methacrylate, was found to produce positive results when tested in the in vitro mouse lymphoma assay both with and without S9 activation. The methacrylate has also been found to produce positive results (structural and numerical) when tested in the in vitro chromosomal aberration test both with and without S9 activation.
Mutagenicity Data (in vivo): In an in vivo mouse Mammalian Erythrocyte Micronucleus Test, HPA was found to be negative for chromosome aberrations.
Chronic/Carcinogenicity Data: There are no chronic effects or carcinogenicity data on HPA.

NTP: Not listed
IARC: Not listed
OSHA: Not listed

Section 12. Ecological Information

Ecotoxicity Data
Acute fish LC50 (Pimephales promelas): 3.6 mg/l (96-hr)
Acute invertebrates EC50 (Daphnia magna): 24 mg/l (48-hr)
Algae ErC50 (Pseudokirchnerella subcapitata): 6.7 mg/l (96-hr)
Algae EbC50 (Pseudokirchnerella subcapitata): 3.5 mg/l (96-hr)

Other Ecotoxicity Data: No applicable information available.

Persistence and Degradability: This substance underwent greater than 90% degradation after 28 days and was, therefore, considered to be readily biodegradable.
HPA hydrolyzed rapidly at pH 11, with a half-life of 0.056 days. In contrast, slow hydrolysis was observed at pH 3 and pH 7, with half-lives greater than 230 days.

Bioaccumulative Potential: Modeling data indicate that this substance is not expected to bioaccumulate. The log Kow was experimentally determined to be 0.2. The log BCF was calculated to be 3.16.
Mobility in Soil: There are no soil mobility data on this substance.

Other Adverse Effects: No applicable information available.

Section 13. Disposal Considerations

Waste Treatment Methods: Dispose of product and contaminated packaging in accordance with all local, state, and federal environmental control regulations.

Section 14. Transport Information

U.S. DOT
UN Number: 2922
Hazard Class: 8 (subsidiary risk: 6.1)
Packing Group: III
Proper Shipping Name: Corrosive liquids, toxic, n.o.s. (Hydroxypropyl acrylate, Stabilized)

IMDG/IMO
UN Number: 2922
Hazard Class: 8 (subsidiary risk: 6.1)
Packing Group: III
Proper Shipping Name: Corrosive liquids, toxic, n.o.s. (Hydroxypropyl acrylate, Stabilized)

ICAO/IATA
UN Number: 2922
Hazard Class: 8 (subsidiary risk: 6.1)
Packing Group: III
Proper Shipping Name: Corrosive liquids, toxic, n.o.s. (Hydroxypropyl acrylate, Stabilized)

Label: Corrosive liquid (subsidiary risk: Toxic)
Marine Pollutant: No
Additional Information/Remarks: Emergency responders should follow the U.S. Department of Transportation's Emergency Response Guidebook Guide No. 153 reflecting the additional hazard of this product's ability to support combustion. Do not use Guide No. 154.

Section 15. Regulatory Information

TSCA Inventory Status: All chemical substances contained within this product either are listed on the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory or subject to an applicable exemption under TSCA.

International Chemical Inventory Status

Country	Inventory	Listed	Not Listed	Notes
Australia	AICS	X		
Canada	DSL	X		
	NDSL		X	
China	IECSC	X		
European Union	REACH	X		List of Registered Substances (247-118-0)
Japan	ENCS	X		2-997
New Zealand	NZIoC	X		HSNO Approval
Philippines	PICCS	X		
South Korea	ECL	X		KE-29612
US	TSCA	X		

OSHA: This product is considered to be hazardous under the OSHA Hazard Communication Standard.

Waste Classification: If discarded in its manufactured form, this product is expected to be a hazardous waste under RCRA. It is the responsibility of the user to determine at the time of disposal whether a material containing the product or derived from the product should be classified as a solid or hazardous waste.

EPCRA/SARA III: This product contains no toxic chemicals at or above the de-minimis threshold subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR 372.

California Proposition 65: This product contains propylene oxide [CAS RN 75-56-9], a substance known to the State of California to cause cancer. The maximum level of propylene oxide in this product is 10 ppm. This information is provided to assist users of this product that conduct business in California in discharging any warning obligations that that person may have under California Proposition 65.

Section 16. Other Information

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.

REVISION DATE: 2/7/2017