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SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Product	2-Hydroxyethyl Methacrylate (2-HEMA)	**Revision date**	2026-11-16
Version	1.0	**Brand**	Richest

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

Product name	2-Hydroxyethyl Methacrylate (2-HEMA)
Synonyms	2-HYDROXYETHYL METHACRYLATE; 868-77-9; Glycol methacrylate; Hydroxyethyl methacrylate; Glycol monomethacrylate; Ethylene glycol methacrylate
CAS No.	868-77-9
EC No.	212-782-2
Molecular formula	C6H10O3
Molecular weight	130.14 g/mol
Relevant identified uses	Laboratory chemicals and manufacture of substances.
Uses advised against	No specific uses advised against were identified in the reviewed sources.
Company	Richest Group
Address	No. 999, Jiangyue Rd, Minhang, Shanghai 201114, China
Telephone	0086 21 5017 5386
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SECTION 2: Hazards identification

GHS Classification	Skin irritation Category 2; Eye irritation Category 2; Skin sensitisation Category 1
Pictogram(s)	GHS07
Signal word	Warning
Hazard statement(s)	H315 Causes skin irritation; H319 Causes serious eye irritation; H317 May cause an allergic skin reaction
Precautionary statement(s)	P280; P305+P351+P338; P333+P313; P337+P313
Other hazards	Allergic contact dermatitis reported in a laboratory technician and in the printing industry; A skin and eye irritant; [HSDB] Hydrolyzed forming methacrylic acid and ethylene glycol; A mild skin and moderate eye irritant; Possesses skin sensitizing properties with equivocal results in human patch testing; [Reference #2] A skin and severe eye irritant; May cause skin sensitization; [Alfa Aesar...

SECTION 3: Composition/information on ingredients

Component	2-Hydroxyethyl Methacrylate (2-HEMA)
CAS No.	868-77-9
EC No.	212-782-2
Classification	Skin irritation Category 2; Eye irritation Category 2; Skin sensitisation Category 1

SECTION 3: Composition/information on ingredients	
Concentration	≥97% HEMA content

SECTION 4: First-aid measures	
If inhaled	Move the person to fresh air and keep comfortable for breathing. Get medical advice if symptoms occur.
In case of skin contact	Wash with plenty of water. Remove contaminated clothing. Get medical advice if irritation occurs.
In case of eye contact	Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Get medical advice if irritation persists.
If swallowed	Rinse mouth. Do not induce vomiting unless directed by medical personnel. Get medical advice if symptoms occur.
Most important symptoms and effects	Inhalation of spray mist, fog or vapours may cause respiratory irritation, coughing, sneezing, nasal discharge and laboured breathing. Skin contact may cause itching, redness, pain, irritation and allergic rash. Eye contact may cause redness, tearing and pain. Ingestion may cause nausea, vomiting, diarrhoea and abdominal discomfort; aspiration into the lungs may cause chemical pneumonitis (KH Chemicals SDS; ICSC 1724).
Indication of immediate medical attention	Treat symptomatically. Show this safety data sheet to medical personnel.

SECTION 5: Fire-fighting measures	
Suitable extinguishing media	Use extinguishing media appropriate for the surrounding fire.
Unsuitable extinguishing media	Full water jet (KH Chemicals SDS).
Special hazards arising from the chemical	Combustible. Above 97 °C explosive vapour/air mixtures may be formed.
Advice for firefighters	Use water spray, dry powder, alcohol-resistant foam. In case of fire: keep drums, etc., cool by spraying with water.

SECTION 6: Accidental release measures	
Personal precautions and emergency procedures	Avoid contact with the material. Ensure adequate ventilation. Wear appropriate personal protective equipment.
Environmental precautions	Prevent uncontrolled release to drains, soil and watercourses.
Methods for containment and cleaning up	Personal protection: chemical protection suit and filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Collect leaking liquid in covered containers. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

SECTION 7: Handling and storage	
Precautions for safe handling	Avoid contact with skin and eyes. Avoid formation or inhalation of dust, mist or vapour as applicable. Wash thoroughly after handling.
Conditions for safe storage, including incompatibilities	Store cool at 2–8°C; keep container tightly closed in a dry, well-ventilated place; light sensitive.

SECTION 8: Exposure controls/personal protection	
Occupational exposure limit values	ICSC 1724 lists the German MAK skin-sensitization notation SH; no numerical occupational exposure limit is given in ICSC 1724 or the KH Chemicals SDS.

SECTION 8: Exposure controls/personal protection

Biological limit values	No biological limit values were identified in the reviewed sources.
Appropriate engineering controls	Provide adequate ventilation. Eyewash facilities should be available where contact is possible.
Eye/face protection	HYDROXYETHYLMETHACRYLATE WAS DEMONSTRATED TO PASS THROUGH VINYL GLOVES.
Skin and body protection	HYDROXYETHYLMETHACRYLATE WAS DEMONSTRATED TO PASS THROUGH VINYL GLOVES.
Respiratory protection	Use suitable respiratory protection if exposure limits may be exceeded or dust, mist or vapour is generated.
Thermal hazards	Avoid heat and strong heating. Explosive vapour/air mixtures may form above 97 °C, and decomposition/polymerization is reported at 200-250 °C (ICSC 1724; KH Chemicals SDS).

SECTION 9: Physical and chemical properties

Physical state	Clear liquid
Colour	Clear mobile liquid
Odour	Ester-like (KH Chemicals SDS; ChemicalBook SDS).
Melting point / freezing point	-11.99°C
Boiling point / boiling range	67°C at 4.7 hPa
Flammability	Combustible. Above 97 °C explosive vapour/air mixtures may be formed.
Explosion / flammability limits	Explosive vapour/air mixtures may form above 97 °C or on intense heating (ICSC 1724; ChemicalBook SDS). No numerical lower or upper limit is assigned here.
Flash point	97 °C (closed cup)
Auto-ignition temperature	375 °C at 1024 hPa (ChemicalBook SDS).
Decomposition temperature	200-250 °C, polymerizes (KH Chemicals SDS).
pH	4 at 500 g/L in water (KH Chemicals SDS).
Viscosity	8.4 mm^2/s at 20 °C
Solubility	100 g/L at 20°C
Partition coefficient n-octanol/water	0.42 at 25°C
Vapour pressure	0.08 hPa at 20°C
Density and/or relative density	1.073 g/mL at 25°C; 1.071 g/mL at 20°C
Relative vapour density	Relative vapor density (air = 1): 4.5
Particle characteristics	Not applicable (liquid).
Refractive index	Index of refraction: 1.4515 @ 20 °C/D

SECTION 10: Stability and reactivity

Reactivity	The substance can polymerize on heating, on contact with peroxides and under the influence of light; unstabilized material may spontaneously polymerize (ICSC 1724). Stable under normal ambient conditions when stabilized (ChemicalBook SDS).
Chemical stability	Stable under recommended storage conditions.

SECTION 10: Stability and reactivity	
Possibility of hazardous reactions	Violent reactions are possible with amines and peroxide polymerization initiators. Heating may cause polymerization with violent combustion or explosion (ChemicalBook SDS; ICSC 1724).
Conditions to avoid	NO open flames. Above 97 °C use a closed system and ventilation.
Incompatible materials	Polymerization catalysts including peroxy or azo compounds, strong acids, alkalis and oxidizing agents; amines and peroxide polymerization initiators can cause violent reactions (KH Chemicals SDS; ChemicalBook SDS).
Hazardous decomposition products	When heated to decomp it emits acrid smoke and irritating fumes.

SECTION 11: Toxicological information	
Skin corrosion irritation	GHS classification: Skin irritation Category 2
Serious eye damage irritation	GHS classification: Eye irritation Category 2
Sensitization	GHS classification: Skin sensitisation Category 1
Acute toxicity	LD50 MICE INTRAPERITONEAL 0.497 ML/KG; LD50 MICE ORAL 5.1 ML/KG; LD50 Rat oral 11.2 g/kg; LD50 Rabbit percutaneous > 3.0 g/kg
Toxicological summary	Safe for use in cosmetics, with qualifications
Health effects	Allergic contact dermatitis reported in a laboratory technician and in the printing industry; A skin and eye irritant; [HSDB] Hydrolyzed forming methacrylic acid and ethylene glycol; A mild skin and moderate eye irritant; Possesses skin sensitizing properties with equivocal results in human patch testing; [Reference #2] A skin and severe eye irritant; May cause skin sensitization; [Alfa Aesar MSDS]
Irritation sensitization	Causes skin irritation and serious eye irritation and may cause an allergic skin reaction. Rabbit eyes were irritating in a Draize test; guinea-pig maximization testing indicated skin sensitization (KH Chemicals SDS; ChemicalBook SDS).
Genetic toxicity	Negative in an in-vitro mammalian cell gene mutation test with Chinese hamster ovary cells and negative in OECD Test Guideline 474 in male rats (ChemicalBook SDS).

SECTION 12: Ecological information	
Ecotoxicity	LC50 Pimephales promelas (fathead minnows) 0.99 g/l/96 hr (95% confidence limit 0.90-1.1 g/l); age 30 days old, water hardness 45.6 mg/l calcium carbonate, temp 24.9 °C, pH 7.66, dissolved oxygen 7.1 mg/l, alkalinity 44.4 mg/l (CaCO3), Tank vol: 2.0 l, additions: 18 vol/day (flow-through bioassay)
Persistence degradability	2-Hydroxyethyl methacrylate, present at 100 mg/l, reached 92-100% of its theoretical BOD in 2 weeks using an activated sludge inoculum and the Japanese MITI test(1).
Bioaccumulative potential	An estimated BCF of 1.3 was calculated for 2-hydroxyethyl methacrylate(SRC), using a log Kow of 0.47(1). According to a classification scheme(2), this BCF suggests the potential for bioconcentration in aquatic organisms is low.
Mobility in soil	The Koc of 2-hydroxyethyl methacrylate is estimated as approximately 43(SRC), using a log Kow of 0.47(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that 2-hydroxyethyl methacrylate is expected to have very high mobility in soil.
Other adverse effects	The rate constant for the vapor-phase reaction of 2-hydroxyethyl methacrylate with photochemically-produced hydroxyl radicals has been estimated as 2.4X10-11 cu cm/molecule-sec at 25 °C(SRC) using a structure estimation method(1).

SECTION 12: Ecological information

Environmental fate	ATMOSPHERIC FATE: According to a model of gas/particle partitioning of semivolatile organic compounds in the atmosphere(1), 2-hydroxyethyl methacrylate, which has a vapor pressure of 0.126 mm Hg at 25 °C(2), is expected to exist solely as a vapor in the ambient atmosphere.
Aquatic toxicity	LC50 Oryzias latipes >100 mg/L, 96 h, semi-static test; EC50 Daphnia magna 380 mg/L, 48 h; EC50 Selenastrum capricornutum 836 mg/L, 72 h (ChemicalBook SDS). HSDB via PubChem additionally reports LC50 Pimephales promelas 0.99 g/L, 96 h, flow-through bioassay.
Bioaccumulation	Estimated BCF 1.3 from log Kow 0.47, indicating low aquatic bioconcentration potential (HSDB via PubChem).
Mobility	Estimated Koc approximately 43, suggesting very high mobility in soil (HSDB via PubChem).

SECTION 13: Disposal considerations

Product disposal methods	SRP: At the time of review, criteria for land treatment or burial (sanitary landfill) disposal practices are subject to significant revision. Prior to implementing land disposal of waste residue (including waste sludge), consult with environmental regulatory agencies for guidance on acceptable disposal practices.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal in accordance with local regulations.

SECTION 14: Transport information

UN Number (ADR/RID, IMDG, IATA)	Not regulated as dangerous goods
UN Proper Shipping Name	Not regulated as dangerous goods
Transport hazard class(es)	Not regulated as dangerous goods
Packing group	Not regulated as dangerous goods
Environmental hazards / Marine pollutant	ADR/RID: no; IMDG marine pollutant: no; IATA: no
Special precautions for user	Keep containers closed and secured during transport. Follow local transport requirements.

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product	No data available

SECTION 16: Other information

Full text of H-Statements	H315 Causes skin irritation; H319 Causes serious eye irritation; H317 May cause an allergic skin reaction
Revision date	2026-11-16
Version	1.0

SECTION 16: Other information

References	Supplier technical documents, public SDS/COA/TDS and regulatory sources reviewed. Public data citations are listed below. Public data sources: PubChem 2-Hydroxyethyl Methacrylate (CID 13360): https://pubchem.ncbi.nlm.nih.gov/compound/13360 | KH Chemicals B.V. Safety Data Sheet: 2-Hydroxyethyl Methacrylate (2-HEMA), version 4.1, 9 July 2026: https://my.chemius.net/p/0TvD2t/en/gh/en | ICSC 1724 - 2-Hydroxyethyl Methacrylate: https://www.inchem.org/documents/icsc/icsc/eics1724.htm | ChemicalBook Safety Data Sheet: 2-Hydroxyethyl methacrylate, CAS 868-77-9: https://www.chemicalbook.com/msds/2-hydroxyethyl-methacrylate.htm | Merck/Sigma-Aldrich 2-Hydroxyethyl methacrylate, product 800588: https://www.merckmillipore.com/INTL/en/product/2-Hydroxyethyl-methacrylate,MDA_CHEM-800588 | Polysciences Safety Data Sheet: 2-Hydroxyethyl methacrylate, Low Acid Grade, product 03699: https://cdn.shopify.com/s/files/1/0713/5258/2358/files/2026_SDS_03699.pdf
Abbreviations	CAS: Chemical Abstracts Service; ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road; IMDG: International Maritime Dangerous Goods; IATA: International Air Transport Association; SDS: Safety Data Sheet.
Disclaimer	The information in this SDS applies to the specified product and is provided in good faith based on information available to Richest Group at the date of issue. It describes health, safety and environmental requirements and does not constitute a guarantee of product properties. Users must assess suitability and comply with applicable regulations.