

SECTION 1: Identification

1.1. Identification

Product form : Mixture
 Product name : Heatfold
 Product code : HF

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

No additional information available

1.3. Details of the supplier of the safety data sheet

Polymeric US
 117 East 14th Avenue
 North Kansas City, MO 64116 - United States
 T 816-221-5567

1.4. Emergency telephone number

Emergency number: Chemtel - U.S., Canada, Puerto Rico, U.S. Virgin Islands 1-800-255-3924; International 813-248-0585

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Skin Irrit. 2 H315 - Causes skin irritation
 Eye Dam. 1 H318 - Causes serious eye damage
 Skin Sens. 1 H317 - May cause an allergic skin reaction
 Carc. 2 H351 - Suspected of causing cancer
 STOT RE 2 H373 - May cause damage to organs through prolonged or repeated exposure

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS07

GHS08

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H315 - Causes skin irritation
 H317 - May cause an allergic skin reaction
 H318 - Causes serious eye damage
 H351 - Suspected of causing cancer
 H373 - May cause damage to organs through prolonged or repeated exposure
 H402 - Harmful to aquatic life

Precautionary statements (GHS-US) : P201 - Obtain special instructions before use
 P202 - Do not handle until all safety precautions have been read and understood
 P260 - Do not breathe dust/fume/gas/mist/vapors/spray
 P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
 P264 - Wash hands thoroughly after handling
 P272 - Contaminated work clothing must not be allowed out of the workplace
 P280 - Wear protective gloves/protective clothing/eye protection/face protection
 P302+P352 - If on skin: Wash with plenty of water
 P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 P308+P313 - If exposed or concerned: Get medical advice/attention
 P314 - Get medical advice/attention if you feel unwell
 P332+P313 - If skin irritation occurs: Get medical advice/attention
 P333+P313 - If skin irritation or rash occurs: Get medical advice/attention
 P362+P364 - Take off contaminated clothing and wash it before reuse
 P363 - Wash contaminated clothing before reuse
 P405 - Store locked up

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P501 - Dispose of contents to approved waste container

2.3. Other hazards

Other hazards not contributing to the classification : None under normal conditions.

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification (GHS-US)
1-ethenyl-2-pyrrolidinone, inhibited	(CAS No) 88-12-0	<6%	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 Eye Dam. 1, H318 Carc. 2, H351 STOT SE 3, H335 STOT RE 2, H373
1,6-hexanediol diacrylate	(CAS No) 13048-33-4	1 – 10%	Skin Irrit. 2, H315 Skin Sens. 1, H317
vinylcaprolactam	(CAS No) 2235-00-9	8-12%	Acute Tox. 4 (Oral), H302

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : IF exposed or concerned: Get medical advice/attention.
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact : When symptoms occur: rinse immediately with plenty of water. Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
First-aid measures after ingestion : Do NOT induce vomiting. Call a POISON CENTER or doctor/physician if you feel unwell.

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

Symptoms/injuries : Irritation of the eye tissue.
Symptoms/injuries after inhalation : May cause respiratory irritation.
Symptoms/injuries after skin contact : Dry skin. Irritation. May cause moderate irritation. Repeated exposure may cause skin dryness or cracking. May cause an allergic skin reaction.
Symptoms/injuries after eye contact : Causes serious eye irritation. May cause severe irritation. Serious damage to eyes.
Chronic symptoms : Possible inflammation of the respiratory tract. Skin rash/inflammation.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide. Dry chemical powder. Preferably: water spray. Water spray. Dry powder. Foam. Carbon dioxide.

5.2. Special hazards arising from the substance or mixture

Reactivity : May polymerize on exposure to amines: pressure rise and possible bursting of container. May polymerize on exposure to temperature rise: (increased) risk of fire/explosion.

5.3. Advice for firefighters

Firefighting instructions : Fight fire with normal precautions from a reasonable distance.
Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Do not enter fire area without proper protective equipment, including respiratory protection. Complete protective clothing.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Absorb spillage to prevent material damage. Isolate from fire, if possible, without unnecessary risk. No flames, No sparks. Eliminate all sources of ignition. No naked lights. No smoking.

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8 Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 8 : Exposure-controls/personal protection".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear personal protective equipment. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin and eyes.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eat, drink or smoke and when leaving work. Remove contaminated clothes.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store locked up. Store in a well-ventilated place. Keep cool.

Incompatible products : Strong bases. strong acids. Oxidizing agent.

Incompatible materials : Direct sunlight. Heat sources. Sources of ignition.

Storage temperature : 25 °C

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

1-ethenyl-2-pyrrolidinone, inhibited (88-12-0)		
ACGIH	ACGIH TWA (ppm)	0.05 ppm
ACGIH	Remark (ACGIH)	Liver dam

8.2. Exposure controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Hand protection : Protective gloves.

Eye protection : Safety glasses.

Skin and body protection : Wear suitable protective clothing.

Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment.

Environmental exposure controls : Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

Color : Varied

Odor : Acrylate odor

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Odor threshold	: No data available
pH	: No data available
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Vapor pressure	: No data available
Relative density	: No data available
Relative vapor density at 20 °C	: No data available
Solubility	: Insoluble in water
Log Pow	: No data available
Auto-ignition temperature	: No data available
VOC	: Negligible
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

May polymerize on exposure to amines: pressure rise and possible bursting of container. May polymerize on exposure to temperature rise: (increased) risk of fire/explosion.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

Oxidizing agent. acids. Combustible materials.

10.6. Hazardous decomposition products

No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

1-ethenyl-2-pyrrolidinone, inhibited (88-12-0)	
LD50 oral rat	1022 mg/kg 834-1314,Rat; Equivalent or similar to OECD 401; Experimental value
LD50 dermal rat	1043 mg/kg rat
LD50 dermal rabbit	> 400 mg/kg (Rabbit; Experimental value; BASF test)
LC50 inhalation rat (mg/l)	3.07 mg/l/4h (Rat; Experimental value)
ATE US (oral)	1022.000 mg/kg body weight
ATE US (dermal)	1043.000 mg/kg body weight
ATE US (gases)	4500.000 ppmV/4h
ATE US (vapors)	3.070 mg/l/4h

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1-ethenyl-2-pyrrolidinone, inhibited (88-12-0)	
ATE US (dust, mist)	3.070 mg/l/4h
1,6-hexanediol diacrylate (13048-33-4)	
LD50 oral rat	> 5000 mg/kg (Rat)
LD50 dermal rabbit	3600 mg/kg (Rabbit)
ATE US (dermal)	3600.000 mg/kg body weight

: Causes skin irritation.

Skin corrosion/irritation

vinylcaprolactam (2235-00-9)	
LD50 oral rat	1400 mg/kg (Rat)
LD50 dermal rabbit	> 400 mg/kg (Rabbit)
ATE US (oral)	1400.000 mg/kg body weight

Serious eye damage/irritation : Causes serious eye damage.

Respiratory or skin sensitization : May cause an allergic skin reaction.

Germ cell mutagenicity : Not classified

Carcinogenicity : Suspected of causing cancer.

1-ethenyl-2-pyrrolidinone, inhibited (88-12-0)	
IARC group	3 - Not Classifiable

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard : Not classified

Symptoms/injuries after inhalation : May cause respiratory irritation.

Symptoms/injuries after skin contact : Dry skin. Irritation. May cause moderate irritation. Repeated exposure may cause skin dryness or cracking. May cause an allergic skin reaction.

Symptoms/injuries after eye contact : Causes serious eye irritation. May cause severe irritation. Serious damage to eyes.

Chronic symptoms : Possible inflammation of the respiratory tract. Skin rash/inflammation.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

1-ethenyl-2-pyrrolidinone, inhibited (88-12-0)	
LC50 fish 1	976 mg/l (LC50; OECD 203: Fish, Acute Toxicity Test; 72 h; Oncorhynchus mykiss; Static system; Fresh water; Experimental value)
EC50 Daphnia 1	45 mg/l (EC50; Equivalent or similar to OECD 202; 48 h; Daphnia sp.; Static system; Fresh water; Experimental value)
Threshold limit algae 1	> 1000 mg/l (ErC50; OECD 201: Alga, Growth Inhibition Test; 72 h; Desmodesmus subspicatus; Static system; Fresh water; Experimental value)

12.2. Persistence and degradability

1-ethenyl-2-pyrrolidinone, inhibited (88-12-0)	
Persistence and degradability	Readily biodegradable in water. Highly mobile in soil.
Biochemical oxygen demand (BOD)	< 0.002 g O ₂ /g substance
Chemical oxygen demand (COD)	1.894 g O ₂ /g substance
1,6-hexanediol diacrylate (13048-33-4)	
Persistence and degradability	Inherently biodegradable.
vinylcaprolactam (2235-00-9)	
Persistence and degradability	Biodegradable in water. Biodegradability in soil: no data available.

12.3. Bioaccumulative potential

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1-ethenyl-2-pyrrolidinone, inhibited (88-12-0)	
Log Pow	0.4 (Experimental value; OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method; 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

1,6-hexanediol diacrylate (13048-33-4)	
Bioaccumulative potential	No bioaccumulation data available.

vinylcaprolactam (2235-00-9)	
Bioaccumulative potential	No bioaccumulation data available.

12.4. Mobility in soil

1-ethenyl-2-pyrrolidinone, inhibited (88-12-0)	
Log Koc	log Koc,SRC PCKOCWIN v2.0; 1.099 - 1.1497; Calculated value

12.5. Other adverse effects

Effect on the global warming : Unknown

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Avoid release to the environment. Discharging into rivers and drains is forbidden. Dispose in a safe manner in accordance with local/national regulations. Do not discharge into drains or the environment. Use appropriate containment to avoid environmental contamination.

Additional information : Clean up even minor leaks or spills if possible without unnecessary risk.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated <119 gallons

Transport document description : UN3082 Environmentally hazardous substances, liquid, n.o.s., 9, III

UN-No.(DOT) : UN3082

Proper Shipping Name (DOT) : Environmentally hazardous substances, liquid, n.o.s., (contains 2-phenoxyethyl acrylate)

Hazard Classes (DOT) : 9 - Class 9 - Miscellaneous hazardous material 49 CFR 173.140

Hazard labels (DOT) : 9 - Class 9 (Miscellaneous dangerous materials)



Packing group (DOT) : III - Minor Danger

DOT Packaging Non Bulk (49 CFR 173.xxx) : 203

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- DOT Special Provisions (49 CFR 172.102) : 8 - A hazardous substance that is not a hazardous waste may be shipped under the shipping description "Other regulated substances, liquid or solid, n.o.s.", as appropriate. In addition, for solid materials, special provision B54 applies.
146 - This description may be used for a material that poses a hazard to the environment but does not meet the definition for a hazardous waste or a hazardous substance, as defined in 171.8 of this subchapter, or any hazard class as defined in Part 173 of this subchapter, if it is designated as environmentally hazardous by the Competent Authority of the country of origin, transit or destination.
173 - An appropriate generic entry may be used for this material.
335 - Mixtures of solids that are not subject to this subchapter and environmentally hazardous liquids or solids may be classified as "Environmentally hazardous substances, solid, n.o.s.," UN3077 and may be transported under this entry, provided there is no free liquid visible at the time the material is loaded or at the time the packaging or transport unit is closed. Each transport unit must be leak-proof when used as bulk packaging.
IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672).
T4 - 2.65 178.274(d)(2) Normal..... 178.275(d)(3)
TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / 1 + a (tr - tf)$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.
TP29 - A portable tank having a minimum test pressure of 1.5 bar (150.0 kPa) may be used provided the calculated test pressure is 1.5 bar or less based on the MAWP of the hazardous materials, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.
- DOT Packaging Exceptions (49 CFR 173.xxx) : 155
- DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : No limit
- DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : No limit
- DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.
- Other information : No supplementary information available.

TDG

No additional information available

Transport by sea

- UN-No. (IMDG) : 3082
- Proper Shipping Name (IMDG) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
- Class (IMDG) : 9 - Miscellaneous dangerous compounds
- Packing group (IMDG) : III - substances presenting low danger
- Marine Pollutant : Yes
- Quantity Limitations : <5 Liters, inner packaging, not regulated

Air transport

- UN-No.(IATA) : 3082
- Proper Shipping Name (IATA) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
- Class (IATA) : 9 - Miscellaneous Dangerous Goods
- Packing group (IATA) : III - Minor Danger
- Quantity Limitations : <5 Liters, inner packaging, not regulated

SECTION 15: Regulatory information

15.1. US Federal regulations

2-phenoxyethyl acrylate(48145-04-6)

SARA Section 313 - Emission Reporting	~25 %
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Components are listed or excluded from listing on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

1-ethenyl-2-pyrrolidinone, inhibited (88-12-0)

U.S. - New Jersey - Right to Know Hazardous Substance List

SECTION 16: Other information

Other information

: Polymeric urges the customer receiving this safety data sheet to study it carefully to become aware of the hazards, if any, in the product. In the interest of safety, the customer should (1) notify your employees, agents and contractors of the information included in this SDS and (2) furnish a copy to each of your employees, customers and agents.

Disclaimer

: Polymeric makes no warranty, express or implied, as to the accuracy or reliability of the information contained herein except that such information is, to the best of Polymeric's knowledge and belief, accurate as of the date indicated on this document. Final determination of suitability of material is the sole responsibility of the user. All the materials may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Full text of H-phrases:

Acute Tox. 4 (Dermal)	Acute toxicity (dermal) Category 4
Acute Tox. 4 (Inhalation)	Acute toxicity (inhalation) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Carc. 2	Carcinogenicity Category 2
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Skin Irrit. 2	Skin corrosion/irritation Category 2
Skin Sens. 1	Skin sensitization Category 1
STOT RE 2	Specific target organ toxicity (repeated exposure) Category 2
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H302	Harmful if swallowed
H312	Harmful in contact with skin
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H332	Harmful if inhaled
H335	May cause respiratory irritation
H351	Suspected of causing cancer
H373	May cause damage to organs through prolonged or repeated exposure

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HMIS III Rating

Health	: 2 Moderate Hazard - Temporary or minor injury may occur
Flammability	: 1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)
Physical	: 1 Slight Hazard - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors.
Personal Protection	: B B - Safety glasses, Gloves

SDS US (GHS HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product