

## SAFETY DATA SHEET

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

#### 1.1. Product identifier

REILLEX\* HP Polymer

Synonyms:

Poly-4-Vinylpyridine, crosslinked with divinylbenzene

Chemical Abstracts Registry No:

9017-40-7

REACH Registration Number:

4-Vinylpyridine monomer: 01-2119970566-26-0000; Divinylbenzene: Not yet registered

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

acid scavenger; metals recovery

#### 1.3. Details of the supplier of the safety data sheet

Vertellus LLC  
201 North Illinois Street, Suite 1800,  
Indianapolis, IN 46204  
800-223-0453

e-mail Address:

sds@vertellus.com

#### 1.4. Emergency telephone number

Vertellus: 1-800-223-0453

CHEMTREC (USA): 1-800-424-9300 (collect calls accepted)

CHEMTREC (International): 1-703-527-3887 (collect calls accepted)

NRCC (China): +86 532 83889090

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

(According to Regulation (EC) No 1272/2008)

Not classified as hazardous under this directive.

(According to Directive 67/548/EEC)

**Symbol:** Not classified as hazardous under this directive.

**Risk Phrases:** Not classified as hazardous under this directive.

**Safety Phrases:** Not classified as hazardous under this directive.

#### 2.2. Label elements

**Signal Word:**

Non-Hazardous

**Hazard Precautions:**

Not classified as hazardous under this directive.

**Prevention Precautionary Statements:**

Note: These precautionary statements are not prescribed by directive 1272/2008 as this product is not classified as hazardous under this directive. Wash hands thoroughly after handling with soap and water. Wear protective gloves, protective clothing, eye protection and face protection. If swallowed, in eyes, on skin or inhaled call a poison center or doctor/physician if you feel unwell. If inhaled, remove victim to fresh air and keep at rest in a comfortable position for breathing. Take off contaminated clothing before reuse. Store in a well-ventilated place. Keep container tightly closed.

## SAFETY DATA SHEET

### SECTION 3: Composition/information on ingredients

#### 3.1. Substances or 3.2. Mixtures

Ingredient	CAS Number	Concentration (weight %)	EC Number	CLP Inventory/ Annex VI	EU DSD Classification (67/548/EEC)	EU CLP Classification (1272/2008)
Poly-4-Vinylpyridine, crosslinked with divinylbenzene	9017-40-7	~ 100 (may be water wet)	Polymer	Not applicable.	Not applicable.	Non-Hazardous

NOTE: See Section 8 for exposure limit data for these ingredients. See Section 15 for trade secret information (where applicable). See Section 16 for the full text of the R-phrases above.

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

Skin Contact:	Wash exposed area twice with soap and water. The exposed area should be examined by medical personnel if irritation or pain persists after the area has been washed.
Eye Contact:	Rinse eyes immediately with large amounts of water for at least 15 minutes, occasionally lifting the eyelids. Seek medical advice if symptoms persist.
Inhalation:	Remove from exposure area to fresh air immediately. If breathing has stopped, give artificial respiration. Seek medical advice if symptoms persist.
Ingestion:	If swallowed, contact physician or poison control center immediately. Give oxygen if respiration is shallow. If irritation or discomfort occurs, obtain medical advice.

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

Acute:	Cross-linked Poly-4-Vinylpyridine polymers are not expected to cause irritation to skin or eyes, based on laboratory test results. Overexposure to dusty material may cause respiratory tract irritation in sensitive individuals. No skin sensitization was observed in laboratory tests. Although it has been observed that the health effects related to this compound are minimal, as with any chemical, use appropriate precautions during handling.
Delayed Effects:	None known.

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

Note to Physician:	No specific indications. Treatment should be based on the judgment of the physician in response to the reactions of the patient.
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### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

Appropriate Extinguishing Media:	Water spray, water fog, alcohol-resistant foam, carbon dioxide, dry chemical.
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## SAFETY DATA SHEET

### 5.2. Special hazards arising from the substance or mixture

Hazardous Products of Combustion:	Toxic vapors may be released upon thermal decomposition (cyanides, nitrogen oxides, carbon monoxide).
Potential for Dust Explosion:	No data available -- handle in a manner that prevents generation of potentially explosive dust.

### 5.3. Advice for firefighters

Basic Fire Fighting Guidance:	Wear self-contained breathing apparatus and full protective clothing (i.e., Bunker gear). Skin and eye contact should be avoided. Normal fire fighting procedures may be used.
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## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Evacuation Procedures:	Isolate the hazard area and deny entry to unnecessary and unprotected personnel.
Special Instructions:	See Section 8 for personal protective equipment recommendations. Remove all contaminated clothing to prevent further absorption. Decontaminate affected personnel using the first aid procedures in Section 4. Leather shoes that have been saturated must be discarded.

### 6.2. Environmental precautions

Prevent releases to soils, drains, sewers and waterways.

### 6.3. Methods and material for containment and cleaning up

Remove all ignition sources. Ventilate the area of spill or leak. Wear protective equipment during clean-up. Material can then be collected for later disposal. After collection of material, flush area with water. Dispose of the material in accordance with standard practice for disposal of potentially hazardous materials as required by applicable federal, state or local laws.

### 6.4. Reference to other sections

Refer to section 8 for information on selecting personal protective equipment. Refer to section 13 for information on spilled product, absorbent and clean up material disposal instructions.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Practices to Minimize Risk:	Wear appropriate protective equipment when performing maintenance on contaminated equipment. Wash hands thoroughly before eating or smoking after handling this material. Do not eat, drink or smoke in work areas. Prevent contact with incompatible materials. Avoid spills and keep away from drains. Handle in a manner to prevent generation of aerosols, vapors or dust clouds.
Special Handling Equipment:	Not applicable.

### 7.2. Conditions for safe storage, including any incompatibilities

Storage Precautions & Recommendations:	This product should be stored at ambient temperature in a dry, well-ventilated location. Keep container closed to prevent drying out
Dangerous Incompatibility Reactions:	Strong oxidizing agents

## SAFETY DATA SHEET

Incompatibilities with Materials of Construction: None known

### 7.3. Specific end use(s)

If a chemical safety assessment has been completed an exposure scenario is attached as an annex to this Safety Data Sheet. Refer to this annex for the specific exposure scenario control parameters for uses identified in subsection 1.2.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Occupational Exposure Limit: Not applicable.  
 Air Monitoring Method: No data available.

### 8.2. Exposure controls

Also see the annex to this SDS (if applicable) for specific exposure scenario controls.

**Other Engineering Controls:** All operations should be conducted in well-ventilated conditions. Local exhaust ventilation should be provided.

**Personal Protective Equipment:** Where overexposures are a concern, use NIOSH-approved dust/mist respirator as necessary. Latex rubber gloves are recommended where contact is likely.

**Respirator Caution:** Observe OSHA regulations for respirator use (29 CFR 1910.134). Air-purifying respirators must not be used in oxygen-deficient atmospheres.

**Thermal Hazards:** Not applicable.

**Environmental Exposure Controls:** The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Appearance, State & Odor (ambient temperature):	White to off-white small beads with no odor.		
Molecular Formula:	$(C_{10}H_{10}C_7H_7N)_n$	Molecular Weight:	No data available.
Vapor Pressure:	No data available.	Evaporation Rate:	No data available.
Specific Gravity or Density:	0.35 g/mL (dry)	Vapor Density (air = 1):	No data available.
Boiling Point:	No data available.	Freezing / Melting Point:	No data available.
Solubility in Water:	Insoluble	Octanol / Water Coefficient:	No data available.
pH:	No data available.	Odor Threshold:	No data available.
Viscosity:	No data available.	Autoignition Temperature:	No data available.

## SAFETY DATA SHEET

Flash Point and Method:	> 300°F (> 148°C) Tag Open Cup	Flammable Limits:	No data available.
Flammability (solid, gas):	No data available.	Decomposition Temperature:	No data available.
Explosive Properties:	Not explosive.	Oxidizing Properties:	Not an oxidizer.

### SECTION 10: Stability and reactivity

<u>10.1. Reactivity</u>	Not classified as dangerously reactive.
<u>10.2. Chemical stability</u>	Stable
<u>10.3. Possibility of hazardous reactions</u>	Polymerization is not expected to occur
<u>10.4. Conditions to avoid</u>	No data available.
<u>10.5. Incompatible materials</u>	Strong oxidizing agents
<u>10.6. Hazardous decomposition products</u>	Toxic vapors may be released upon thermal decomposition (cyanides, nitrogen oxides, carbon monoxide).

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute Oral LD <sub>50</sub> :	> 5000 mg/kg (rat)	Poly-4-Vinylpyridine, crosslinked with divinylbenzene
Acute Dermal LD <sub>50</sub> :	> 2000 mg/kg (rabbit)	Poly-4-Vinylpyridine, crosslinked with divinylbenzene
Acute Inhalation LC <sub>50</sub> :	No data available.	
Skin Irritation:	Non-irritating to skin.	
Eye Irritation:	Non-irritating to eyes.	
Skin Sensitization:	Negative for sensitizing effects in guinea pig maximization test.	
Mutagenicity:	No data available.	
Reproductive / Developmental Toxicity:	No data available.	
Carcinogenicity:	This material is not listed by IARC, NTP or OSHA as a carcinogen. No test data is available that indicates this material is a carcinogen.	
Target Organs:	No data available.	
Aspiration Hazard:	Based on physical properties, not likely to be an aspiration hazard.	
Primary Route(s) of Exposure:	Skin contact and absorption, eye contact, and inhalation. Ingestion is not likely to be a primary route of exposure.	

## SAFETY DATA SHEET

Most important symptoms and effects, both acute and delayed

Cross-linked Poly-4-Vinylpyridine polymers are not expected to cause irritation to skin or eyes, based on laboratory test results. Overexposure to dusty material may cause respiratory tract irritation in sensitive individuals. No skin sensitization was observed in laboratory tests. Although it has been observed that the health effects related to this compound are minimal, as with any chemical, use appropriate precautions during handling. Delayed Effects: None known.

Additive or Synergistic effects:

None known.

### SECTION 12: Ecological information

<u>12.1. Toxicity</u>	No data available.
<u>12.2. Persistence and degradability</u>	Does not biodegrade readily.
<u>12.3. Bioaccumulative potential</u>	Bioconcentration is not expected to occur.
<u>12.4. Mobility in soil</u>	No data available.
<u>12.5. Results of PBT and vPvB assessment</u>	This substance is not a PBT or vPvB.

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

US EPA Waste Number:	Non-Hazardous
Waste Classification: (per US regulations)	The waste may be classified as "special" or hazardous per State regulations.
Waste Disposal:	NOTE: Generator is responsible for proper waste characterization. State hazardous waste regulations may differ substantially from federal regulations. Dispose of this material responsibly, and in accordance with standard practice for disposal of potentially hazardous materials as required by applicable international, national, regional, state or local laws, and environmental protection duty of care principles. Do NOT dump into any sewers, on the ground, or into any body of water. For disposal within the EC, the appropriate classification code according to the European Community List of Wastes should be used. Note that disposal regulations may also apply to empty containers and equipment rinsates.

### SECTION 14: Transport information

The following information applies to all shipping modes (DOT/IATA/ICAO/IMDG/ADR/RID/ADN), unless otherwise indicated:

14.1. UN number	Non-Hazardous	14.2. UN proper shipping name	Chemicals, n.o.s. (Poly-4-Vinylpyridine, crosslinked with divinylbenzene)
14.3. Transport hazard class(es)	Not applicable.	14.4. Packing group	Not applicable.
14.5. Environmental hazards	Not applicable.		
14.6. Special precautions for user	Not applicable.		
NA Emergency Guidebook Numbers:	Not applicable.	IMDG EMS:	Not applicable.
14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code			Not applicable.

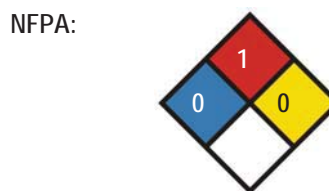
## SAFETY DATA SHEET

### SECTION 15: Regulatory information

#### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Chemical Inventory Lists:	Status:		
USA TSCA:	Listed	EINECS:	Polymer, monomers listed
Canada(DSL/NDSL):	Listed (DSL)	Japan:	Listed (6-1463)
Korea:	Listed (KE-13322)	Australia:	Not listed.
China:	Not listed.	Philippines:	Not listed.
Taiwan:	Listed	New Zealand:	Not listed.
WHMIS Classification:	This product is not classified as a controlled product under Canadian Controlled Products Regulations.		
German Water Hazard Classification:	WGK 1 (self-classification)		
SARA 313:	Not applicable.		
Reportable Quantities:	Not applicable.		
State Regulations:	Not applicable.		

HMIS:	<b>HEALTH</b>	0
	<b>FLAMMABILITY</b>	1
	<b>REACTIVITY</b>	0



#### 15.2. Chemical safety assessment

Not applicable.

### SECTION 16: Other information

Full text of R phrases in Section 3:	Non-Hazardous
Classification Method:	On basis of test data
Legend of Abbreviations:	

ACGIH = American Conference on Governmental Industrial Hygienists.  
 CAS = Chemical Abstracts Service.  
 CFR = Code of Federal Regulations.  
 DSL/NDSL = Domestic Substances List/Non-Domestic Substances List.  
 EC = European Community.  
 EINECS = European Inventory of Existing Commercial Chemical Substances.  
 ELINCS = European List of Notified Chemical Substances.  
 EU = European Union.  
 GHS = Globally Harmonized System.  
 LC = Lethal Concentration.

LD = Lethal Dose.  
 NFPA = National Fire Protection Association.  
 NIOSH = National Institute of Occupational Safety and Health.  
 NTP = National Toxicology Program.  
 OSHA = Occupational Safety and Health Administration  
 PEL = Permissible Exposure Limit.  
 RQ = Reportable Quantity.  
 SARA = Superfund Amendments and Reauthorization Act of 1986.  
 TLV = Threshold Limit Value.  
 WHMIS = Workplace Hazardous Materials Information System.

## SAFETY DATA SHEET

Important Note: Please note that the information contained herein is furnished without warranty of any kind. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. The information contained herein may change without prior notice. THIS SAFETY DATA SHEET SUPERSEDES ALL PREVIOUS EDITIONS.

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