Safety Data Sheet

Section 1 – Identification of Mixture & Company

Date of SDS: May 26, 2016

1.1 Product
Name: MVB Primer, 'B' Component
Description: Epoxy
Manufacturer/Supplier: Industrial Polymers LLC

1.3 Supplier of the safety data sheet
Industrial Polymers LLC Phone: 949 386 4652
12812 Valley View St, Unit 34
Garden Grove, CA 92845

1.4 Emergency contact
949 386 4652

Section 2 – Hazardous Identification

2.1.1 Classification according to OSHA 29CFR1910.1200 & EU (EC) 1272/2008

Skin irritation cat. 2	H315
Skin sensitization cat. 1	H317
Serious eye damage cat.2	H319
Aquatic chronic cat. 2	H411

2.2.1 Labeling according to OSHA 29CFR1910.1200 & EU (EC) 1272/2008

Signal Word: Warning

Hazard pictogram:

Hazard statements
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements
P261 Avoid breathing mist/vapors/spray.
P264 Wash hands and skin contact areas thoroughly after handling.
P272 Contaminated work clothing should not be allowed out of the work place.
P273 Avoid release to the environment.
P280 Wear protective gloves / eye protection / face protection.
P302 & P352 IF ON SKIN: Wash with plenty of soap and water.
P305 & P351 & P338 IF IN EYES: Rinse cautiously with water for several minuets.
P333 & P313 If skin irritation or rash occurs: Get medical advice/ attention.
P337 & P313 If eye irritation persists: Get medical advice/attention.
P362 Take off contaminated clothing and wash before reuse.
P391 Collect spillage.
P501 Dispose of contents/container through a waste management company authorized by the local government.

2.3 OSHA GHS classification
This product has components that are classified as hazardous as defined within the GHS OSHA Hazard Communication Standard 29CFR1910.1200.

Section 3 - Composition

3.1 Substances

Component	CAS No.
Epichlorohydrin	25068-38-6

3.2 Mixtures

Section 4 – First Aid Measures

4.1 Description of First Aid Measures
General advise: Consult a physician; show this SDS to doctor in attendance.
In the event of:
Skin Contact: Rinse immediately with plenty of water; remove contaminated clothing; wash contact area with soap & water for at least 15 minuets. If irritation, rash or other adverse effects develop, get immediate medical attention.
Eye Contact: Bathe the eye with running water for at least 15 minuets, lifting upper and lower eyelids. Get medical attention immediately.
Swallowing: DO NOT INDUCE VOMITING (danger of perforation of the esophagus and stomach). Rinse out mouth with water; drink several glasses of water. Call nearest Poison Center or physician immediately.
Exposure by Inhalation: Move person to fresh air and keep at rest in a position comfortable for breathing; if breating is irregular, provide artificial respiration; if there are breathing difficulties, administer oxygen; get medical attention.

4.2 Most important symptoms and effects, both acute and delayed
Harmful if inhaled, swallowed or in contact with skin; sensitizer; suspected of causing genetic defects and cancer. Overexposure may lead to edema of the larynx and bronchi, chemical pneumonitis, pulmonary edema.

4.3 Indication of any immediate medical attention and special treatment needed
Treat systematically. Corticoid preparations and antihistamine may assist treating skin and mucous membrane exposures.
Eye wash equipment and plenty of water should be available.

Section 5 – Fire Fighting Measures

5.1 Extinguishing media:
Carbon dioxide, alcohol resistant foam, dry chemical, water, water fog.

5.2 Special hazards arising from the mixture:
Exposure to decomposition products may be harmful to health; combustion products may include but are not limited to: carbon monoxide, carbon dioxide; the formation of hydrocarbon fragments is possible in the initial stages of fire (especially between 400 C and 700 C); smoke may contain particles of the original material as well; vapors may travel a considerable distance and flashback to the source.

5.3 Advise for fire fighters:
Use protective fire fighting clothing and positive pressure self-contained breathing apparatus to protect against potential harmful and/or irritating fumes. Do not use high pressure water jet as may by physical force spread the area of the fire. Cool fire-exposed drums with water stream to prevent pressure buildup and possible explosive rupture.

Section 6 – Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures:
Isolate area; eliminate all sources of ignition; ensure adequate ventilation; use appropriate personal protection equipment; avoid breathing mist, vapors spray; avoid contact with skin, eyes and clothing; keep unnecessary and unprotected people from entering the involved area.

6.2 Environmental precautions:
Halt the flow of material as soon as possible using appropriate barriers; turn containers leak-side up to stop release of liquid. Prevent contamination of soil and water. Prevent from spreading or entering into drains, ditches, waterways by using sand, earth or other appropriate barriers.

6.3 Methods and material for containment and cleanup:
Soak up with sand, earth, diatomaceous earth or other suitable inert absorbent material; collect into suitable waste disposal containers. Reuse uncontaminated material when possible. Wash site where spilled with large amounts of water. Dispose of in accordance with applicable local and federal environmental control laws and regulations.

6.4 Reference to other sections:
For more information on exposure controls, personal protection and disposal, review data in Section 8 and Section 13 of this SDS.

Section 7 – Handling and Storage

7.1 Precautions for safe handling:
Ensure adequate ventilation. Prevent: inhalation of mist/vapors/spray, ingestion, contact with skin, eyes and clothing. Keep containers closed when not in use. Precautions apply to empty containers as well. Do

not eat, drink or smoke in the area where material is being used. Keep ignition sources away and turn off pilot

Section 8 – Exposure Controls / Personal Protection

8.1 Control parameters
Occupational exposure limits:
For BGE: OSHA PEL(TWA): 50 ppm (270 mg/m3)
ACGIH TWA: 3 ppm (16 mg/m3)
NIOSH REL: 5.6 ppm (30 mg/m3)
Great Britain: WEL-TWA: 25 ppm (135 mg/m3)

8.1.2 Recommended monitoring procedures
If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be necessary to determine the effectiveness of the ventilation or other control measures &/or the necessity to use respiratory protective equipment. Reference can be made to European Standard EN 689 for assessment methods of exposure by inhalation to chemical agents for the determination of hazardous substances.

8.2 Exposure controls:
Follow good industrial workplace practices; do not eat, drink or smoke while handling; wash hands before breaks and at the end of workshift; follow recommendations in this SDS.

8.2.1 Appropriate engineering controls
Ensure adequate ventilation through local exhaust to control exhaust to control airborne concentrations.

8.2.2 Individual protection measures, such as personal protective equipment

8.2.2.1 Eye/face protection
Wear tight-fitting chemical safety goggles and face shield to prevent eye contact. Refer to OSHA Standard 29CFR1910.133 & European Standard EN166.

8.2.2.2 Skin protection
Wear impervious clothing as necessary to protect against product contact. Necessity for boots, apron, face shield, etc. will be dependent on any hazards presented in the work process. Refer to CFR1910.132 & CFR1910.136 for OSHA approved standards on protective clothing and footwear.

8.2.2.3 Respiratory protection
Respiratory protection is required wherever exposure limits are exceeded; use a NIOSH approved organic vapor cartridge respirator following the guidelines of an established respiratory protection program in compliance with 29CFR1910.134. Note that air-purifying respirators are only recommended for use in atmospheres containing up to tem times the permissible exposure limit; if this higher limit is exceeded, a supplied air respirator must be used; always consult respirator manufacturer instructions. Self-contained greathing apparatus should also be available in case of emergencey.

8.2.2.4 Hand protection
Use suitable impervious neoprene, chloroprene or nitrile rubber gloves. When prolonged or frequently repeated contact may occur, glove material should have a breakthrough time that exceeds 480 minuets (breakthrough rating = 6); when only brief contact is expected, a glove with lesser breakthrough rating (rating 2 = >30 minuets) may be suitable. Note the requirements of Standard EN 374.

Other Protective Equipment: The type and degree of personal protective equipment appropriate will depend on the specific work operation. Eye wash stations and emergency showersshould be available. Inspect and replace personal protective equipment at regular intervals; use professional care in their selection, use and care.

8.3 Environmental exposure controls
Observe all precautions to prevent contamination of soil and waterways.

Section 9 – Physical and Chemical properties

9.1 Information on basic physical and chemical properties
9.1.1 General information:
Appearance: Liquid
Color: Colorless (G color 1 max)
Type of Odor: Characteristic, sweet, alcohol-like
Odor Threshold: No data available

9.1.2 Important health, safety and environmental information:
Boiling Point: 166-168 C (331-334 F)
Melting Point: No data available
Flammability Classification: Combustible II
Flash Point: 52 C (126 F) (cc)
Autoignition Temperature: 215 C (419 F)
Decomposition Temperature: Not determined
Flammability Limits (lower/upper): LEL: **UEL:**
Vapor Pressure: 3.99 hPa @ 20 C
Vapor Density (Air=1): 4.5
Evaporation Rate (BuAc=1): <1
Octnol/Water Partition Coefficient (log Pow**):** 3
Specific Gravity: 1.13
Bulk Density: 9.42 #/gal
Water Solubility: Nil (<0.1%)
pH: Approximately neutral (1:1 in water)
Viscosity: 375 cP @ 25C
Explosive Properties: Not determined
Oxidizing Properties: Not Determined
Molecular Formula: Polymer
Average Molecular Weight: No data available

Section 10 – Stability and Reactivity

10.1 Reactivity
No dangerous reaction is known under normal use and storage conditions.

10.2 Stability
Stable under normal use and storage conditions. Upon prolonged storage the material may crystallize which is a reversible condition; crystallized material can be liquefied back by heating slowly to 50 C for 6-24 hours.

10.3 Possibility of hazardous reactions
Quantities of more than one pound (approximately 1/2 kg) of product with the 'A' component or any other aliphatic amine will cause irreversible polymerization with considerable heat build up. Material will polymerize in contact with Sodium Hydroxide.

10.4 Conditions to avoid
Avoid elevated temperatures, acids, alkalis, mercaptans.

10.5 Incompatible materials
Strong oxidizing agents, acids, alkalis, amines, mercaptans.

10.6 Hazardous decomposition products
Uncontrolled exothermic reaction of resin releases carbon monoxide, carbon dioxide, phenolics.

Section 11 – Toxicological Information

11.1 Information on toxicological effects
Acute Oral Toxicity: LD50(rat): >5,000 mg/kg
Acute Dermal Toxicity: LD50(rabbit): 20,000 mg/kg
Skin Corrosion/Irritation (rabbit): Causes slight skin irritation.
Serious Eye Damage / Eye Irritation (rabbit): Causes serious eye irritation; corneal injury is not likely.
Skin Sensitization (guinea pig): Causes allergic skin reaction.
Germ Cell Mutagenicity: Not classified on available data.
Carcinogenicity: Not classified based on available data. Not listed by IARC, NTP, OSHA.
Reproductive Toxicity: Not classified based on available data.
Specific Target Organ Toxicity – single exposure (STOT-re): Not classified based on available data.
Specific Target Organ Toxicity – repeated exposure (STOT-re): Not classified based on available data.
Aspiration Hazard: Not classified based on available data.

Potential Health Effects:
Skin Contact: Harmful if absorbed through the skin; may cause irritation; may cause sensitization.
Eye Contact: Severely irritating.
Ingestion: Harmful if ingested. There may be vomiting, nausea, stomach pain.
Inhalation: Harmful if inhaled; irritating to the respiratory tract; may cause respiratory sensitization. There may be coughing, wheezing, nausea, vomiting, stomach pain, drowsiness.

Chronic Health Effects:
Repeated and/or prolonged exposure to low concentrations of vapors/aerosols may cause liver, kidney, blood disorders.

Additional Information: RTECS No. TX4200000

Section 12 – Ecological Information

12.1 Toxicity

12.1.1 Acute/prolonged toxicity to fish
LC50 (Freshwater fish)(96-hr):

12.1.2 Acute/prolonged toxicity to aquatic invertebrates
EC50 (Daphnia magna)(24-hr):

12.1.3 Acute/prolonged toxicity to aquatic plants
EC50 (Alge)(72-hr):

12.1.4 Toxicity to bacteria, to soil dwelling organisms & to terrestrial plants
No data available

12.1.5 Chronic toxicity to aquatic organisms
No data available

12.1.6 General effect
Note that product is essentially water insoluble; not expected to present a marine hazard.

12.2 Persistence & degradability
Biodegradation rate: 5% after 28 days (not readily biodegradable)

12.3 Bioaccumulative potential
BCF = 31, Log Pow = 3 (low potential to bioaccumulate in aquatic organizims)

12.4 Mobility in soil
No data available

12.5 Results of PBT & vPvB assessment (EC reg. 453/2010)
Not classified as Persistent, Bioaccumulative and Toxic.
Not classified as very Persistent or very Bioaccumulative.

12.6 German WGK classification
No data available

12.7 Other adverse effects
No data available

Section 13 – Disposal Considerations

13.1 Waste treatment methods
Disposal: Do not dump to ground, sewers or watercourses. Reuse uncontaminated material when possible. All methods of disposal must be in compliance with all applicable federal, state and local environmental control laws and regulations. Waste characterization according to RCRA guidelines and compliance with applicable laws are the responsibility solely of the waste generator.
Container Disposal: Containers should be drained of all residual product prior to disposal; empty/clean containers should be recycled; incinerate or landfill when recycling is not feasible.

Section14 – Transport Information

14.1 Shipping description

DOT Proper Shipping Description: Not regulated as hazardous for transport

IMDG Proper Shipping Description:
UN3082 Environmentally hazardous substance, liquid, n.o.s.

Hazard Class: 9
Packing Group: PG III
EmS No.: F-A, S-F
Marine Polutant: Yes

IATA Proper Shipping Description:
UN3082 Environmentally hazardous substance, liquid, n.o.s.
Hazard Class: 9
Packing Group: PG III

Section 15 – Regulatory Information

HMIS Ratings: Health: 2
Flammability: 1
Reactivity: 0

(Personal protective equipment selection is best assigned by the user after doing a hazard assessment on the product based on use per specific application.)

Synonyms:

National chemical inventories
TSCA (USA)
DSL (Canada)
EINECS (Europe)
ENCS (Japan)
ECL (Korea)
AICS (Australia)
PICCS (Philippines)
IECSC (China)
NZloC (New Zealand)
ECSI (Taiwan)

Abbreviations

ACGIH	American Conference of Governmental Industril Hygienists
ADR	International carriage of Dangerous goods by Road
AICS	Australian Inventory of Chemical Substances
BfR	Bundesinstitut fur Risikobewertung recommendations for food contact materials
BFC	Bioconcentration Factor
CERCLA	Comprehensive Environmental Response, Compensation and Liability
CLP	Classification, Labeling and Packaging regulation
DOT	Department of Transportation
DSL	Domestic Substances List
EINECS	European Inventory of Existing Chemical Substances
ECL	Existing Chemicals List (Korea)
ENCS	Existing and New Chemical Substances Inventory (Japan)
EN 689	Workplace atmospheres – Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy
ERG	Emergency Response Guide
GHS	Globally Harmonized System
HMIS	Hazardous Material Information System

IARC International Agency for Research on Cancer
IATA International Air Transport Association
ICAO International Civil Aviation Organization
IDLH Immediately Dangerous to Life and Health
IMDG International Maritime Dangerous Goods
LD50 Lethal Dose to 50% of test animal population
MAK Maximale Arbeitsplatz Konzentration
NOAEL No observable adverse effect level
NTP National Toxicology Program
OEL Occupational Exposure Limit
OSHA Occupational Safety & Health Administration
PBT Persistent, Bioaccumulative and Toxic
vPvB Very Persistent and Very Bioaccumulative
PEL Permissible exposure limit
PICCS Philippine Inventory of Commercial Chemical Substances
PNEC Predicted No Effect Concentration
REACH Registration, evaluation and authorization of chemical substances
RID International carriage of dangerous goods by Rail
SARA Superfund Amendments and Reauthorization Act
STEL Short Term Exposure Limit
SVHC Substance of Very High Concern
TLV Threshold Limit Value
TSCA Toxic Substances Control Act
TWA Time Weighted Averagr
VOC Volatile organic compound
WGK Wassergefahrdungsklasse (Water Hazard Class)
WHMIS Workplace Hazardous Material Identification System
