MATERION

SAFETY DATA SHEET

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

1.1. Product identifier

Trade name or designation of the mixture SilverTech Epoxy Kit Part A

Registration number -

Synonyms None.

Issue date 23-April-2019

Revision date 14-February-2020

1.3. Details of the supplier of the safety data sheet

Supplier

Company name Materion Advanced Materials Group

Address 42 Mt. Ebo Road South
Brewster, NY 10509
United States

Division

Telephone 1+845.279.0900

e-mail Not available.

Contact person Not available.

1.4. Emergency telephone number

Chemtrec 1+703.527.3887

Supersedes date 23-April-2019

Version number 02

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

Identified uses Not available.

Uses advised against None known.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classificatior applies.

Classification according to Regulation (EC) No 1272/2008 as amended

Health hazards

Acute toxicity, oral	Category 4	H302 - Harmful if swallowed.
Acute toxicity, dermal	Category 3	H311 - Toxic in contact with skin.
Skin corrosion/irritation	Category 2	H315 - Causes skin irritation.
Serious eye damage/eye irritation	Category 2	H319 - Causes serious eye irritation.
Skin sensitisation	Category 1	H317 - May cause an allergic skin reaction.
Germ cell mutagenicity	Category 2	H341 - Suspected of causing genetic defects.
Carcinogenicity	Category 2	H351 - Suspected of causing cancer.

Environmental hazards

Hazardous to the aquatic environment, long-term aquatic hazard	Category 2	H411 - Toxic to aquatic life with long lasting effects.

Hazard summary Toxic in contact with skin. Suspected of causing cancer. Causes serious eye irritation. Causes skin irritation. May cause an allergic skin reaction. Suspected of causing genetic defects. Dangerous for the environment if discharged into watercourses. Occupational exposure to the substance or mixture may cause adverse health effects. The material as sold in solid form is generally not considered hazardous. However, if the process involves grinding, melting, cutting or any other process that causes a release of dust or fumes, hazardous levels of airborne particulate could be generated.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Butyl 2,3-epoxypropyl Ether, Epichlorhydrin, RM Exopy Resin, Silver

Hazard pictograms

Signal word Danger

Hazard statements

H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H341	Suspected of causing genetic defects.
H351	Suspected of causing cancer.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Response

P301 + P312	IF SWALLOWED: Call a POISON CENTRE/doctor if you feel unwell.
P330	Rinse mouth.
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.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P337 + P313	If eye irritation persists: Get medical advice/attention.
P361 + P364	Take off immediately all contaminated clothing and wash it before reuse.
P391	Collect spillage.

Storage

P405	Store locked up.

Disposal

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

Supplemental label information 100 % of the mixture consists of component(s) of unknown acute oral toxicity. 100 % of the mixture consists of component(s) of unknown acute dermal toxicity. 40 % of the mixture consists of component(s) of unknown acute hazards to the aquatic environment.
For further information, please contact the Product Stewardship Department at +1.800.862.4118.

2.3. Other hazards Not a PBT or vPvB substance or mixture.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Silver	65 - 75	7440-22-4 231-131-3	-	-	#
Classification: -					
RM Exopy Resin	20 - 30	25068-38-6 500-033-5	-	603-074-00-8	
Classification: -					

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Butyl 2,3-epoxypropyl Ether	3 - 10	2426-08-6 219-376-4	-	603-039-00-7	
Classification: -					
Epichlorhydrin	≤ 0,0002	106-89-8 203-439-8	-	603-026-00-6	
Classification: -					

List of abbreviations and symbols that may be used above

#: This substance has been assigned Union workplace exposure limit(s).
M: M-factor
PBT: persistent, bioaccumulative and toxic substance.
vPvB: very persistent and very bioaccumulative substance.
All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

Composition comments The full text for all H-statements is displayed in section 16.

SECTION 4: First aid measures

General information Take off immediately all contaminated clothing. IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

4.1. Description of first aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Remove contaminated clothing immediately and wash skin with soap and water. Get medical advice/attention if you feel unwell. In case of eczema or other skin disorders: Seek medical attention and take along these instructions. Wash contaminated clothing before reuse.

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash.

4.3. Indication of any immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

SECTION 5: Firefighting measures

General fire hazards No unusual fire or explosion hazards noted.

5.1. Extinguishing media

Suitable extinguishing media Water spray. Foam. Powder. Carbon dioxide (CO2).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture During fire, gases hazardous to health may be formed.

5.3. Advice for firefighters

Special protective equipment for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Special firefighting procedures Use water spray to cool unopened containers.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

For emergency responders

Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

6.2. Environmental precautions

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up

Prevent entry into waterways, sewer, basements or confined areas.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers.

6.4. Reference to other sections

For personal protection, see section 8. For waste disposal, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not taste or swallow. Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. When using, do not eat, drink or smoke. Should be handled in closed systems, if possible. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Wash contaminated clothing before reuse. Observe good industrial hygiene practices.

7.2. Conditions for safe storage, including any incompatibilities

Store locked up. Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

7.3. Specific end use(s)

Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Austria. MAK List, OEL Ordinance (GwV), BGBl. II, no. 184/2001

Components	Type	Value	Form
Silver (CAS 7440-22-4)	MAK	0,1 mg/m3	Inhalable fraction.
	STEL	0,1 mg/m3	Inhalable fraction.

Austria. TRK List, OEL Ordinance (GwV), BGBl. II, no. 184/2001

Components	Type	Value
Epichlorhydrin (CAS 106-89-8)	STEL	48 mg/m3
		12 ppm
	TWA	12 mg/m3
		3 ppm

Belgium. Exposure Limit Values.

Components	Type	Value
Butyl 2,3-epoxypropyl Ether (CAS 2426-08-6)	TWA	16,2 mg/m3
		3 ppm
Epichlorhydrin (CAS 106-89-8)	TWA	2 mg/m3
		0,5 ppm

Belgium. Exposure Limit Values.

Components	Type	Value
Silver (CAS 7440-22-4)	TWA	0,1 mg/m3

Bulgaria. OELs. Regulation No 13 on protection of workers against risks of exposure to chemical agents at work

Components	Type	Value
Epichlorhydrin (CAS 106-89-8)	TWA	8 mg/m3
Silver (CAS 7440-22-4)	TWA	0,1 mg/m3

Croatia. Dangerous Substance Exposure Limit Values in the Workplace (ELVs), Annexes 1 and 2, Narodne Novine, 13/09

Components	Type	Value
Butyl 2,3-epoxypropyl Ether (CAS 2426-08-6)	MAC	135 mg/m3
		25 ppm
Epichlorhydrin (CAS 106-89-8)	MAC	1,9 mg/m3
		0,5 ppm
	STEL	5,8 mg/m3
		1,5 ppm
Silver (CAS 7440-22-4)	MAC	0,1 mg/m3

Czech Republic. OELs. Government Decree 361

Components	Type	Value
Epichlorhydrin (CAS 106-89-8)	Ceiling	2 mg/m3
	TWA	1 mg/m3
Silver (CAS 7440-22-4)	Ceiling	0,3 mg/m3
	TWA	0,1 mg/m3

Denmark. Exposure Limit Values

Components	Type	Value	Form
Butyl 2,3-epoxypropyl Ether (CAS 2426-08-6)	TLV	30 mg/m3	
		6 ppm	
Epichlorhydrin (CAS 106-89-8)	TLV	1,9 mg/m3	
		0,5 ppm	
Silver (CAS 7440-22-4)	TLV	0,01 mg/m3	Dust.

Estonia. OELs. Occupational Exposure Limits of Hazardous Substances. (Annex of Regulation No. 293 of 18 September 2001)

Components	Type	Value
Butyl 2,3-epoxypropyl Ether (CAS 2426-08-6)	STEL	80 mg/m3
		15 ppm
	TWA	50 mg/m3
		10 ppm
Epichlorhydrin (CAS 106-89-8)	STEL	4 mg/m3
		1 ppm
	TWA	1,9 mg/m3
		0,5 ppm
Silver (CAS 7440-22-4)	TWA	0,1 mg/m3

Finland. Workplace Exposure Limits

Components	Type	Value
Butyl 2,3-epoxypropyl Ether (CAS 2426-08-6)	STEL	140 mg/m3

Finland. Workplace Exposure Limits

Components	Type	Value
		25 ppm
Epichlorhydrin (CAS 106-89-8)	TWA	1,9 mg/m3
		0,5 ppm
Silver (CAS 7440-22-4)	TWA	0,1 mg/m3

France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984

Components	Type	Value
Butyl 2,3-epoxypropyl Ether (CAS 2426-08-6)	VME	135 mg/m3
Regulatory status: Indicative limit (VL)		
		25 ppm
Regulatory status: Indicative limit (VL)		
Epichlorhydrin (CAS 106-89-8)	VLE	10 mg/m3
Regulatory status: Indicative limit (VL)		
		2 ppm
Regulatory status: Indicative limit (VL)		
Silver (CAS 7440-22-4)	VME	0,1 mg/m3
Regulatory status: Regulatory indicative (VRI)		

Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG)

Components	Type	Value	Form
Silver (CAS 7440-22-4)	TWA	0,1 mg/m3	Inhalable fraction.

Germany. TRGS 900, Limit Values in the Ambient Air at the Workplace

Components	Type	Value	Form
Silver (CAS 7440-22-4)	AGW	0,1 mg/m3	Inhalable fraction.

Greece. OELs (Decree No. 90/1999, as amended)

Components	Type	Value
Butyl 2,3-epoxypropyl Ether (CAS 2426-08-6)	TWA	135 mg/m3
		20 ppm
Epichlorhydrin (CAS 106-89-8)	STEL	20 mg/m3
		5 ppm
	TWA	10 mg/m3
		2,5 ppm
Silver (CAS 7440-22-4)	TWA	0,1 mg/m3

Hungary. OELs. Joint Decree on Chemical Safety of Workplaces

Components	Type	Value
Epichlorhydrin (CAS 106-89-8)	Ceiling	1,9 mg/m3
Silver (CAS 7440-22-4)	STEL	0,4 mg/m3
	TWA	0,1 mg/m3

Iceland. OELs. Regulation 154/1999 on occupational exposure limits

Components	Type	Value	Form
Butyl 2,3-epoxypropyl Ether (CAS 2426-08-6)	TWA	30 mg/m3	
		6 ppm	
Epichlorhydrin (CAS 106-89-8)	TWA	1,9 mg/m3	
		0,5 ppm	
Silver (CAS 7440-22-4)	TWA	0,01 mg/m3	Dust.

Ireland. Occupational Exposure Limits

Components	Type	Value
Butyl 2,3-epoxypropyl Ether (CAS 2426-08-6)	TWA	135 mg/m3
		25 ppm
Epichlorhydrin (CAS 106-89-8)	TWA	2 mg/m3
		0,5 ppm
Silver (CAS 7440-22-4)	TWA	0,1 mg/m3

Italy. Occupational Exposure Limits

Components	Type	Value
Butyl 2,3-epoxypropyl Ether (CAS 2426-08-6)	TWA	3 ppm
Epichlorhydrin (CAS 106-89-8)	TWA	0,5 ppm
Silver (CAS 7440-22-4)	TWA	0,1 mg/m3

Latvia. OELs. Occupational exposure limit values of chemical substances in work environment

Components	Type	Value
Epichlorhydrin (CAS 106-89-8)	TWA	1 mg/m3
Silver (CAS 7440-22-4)	TWA	0,1 mg/m3

Lithuania. OELs. Limit Values for Chemical Substances, General Requirements

Components	Type	Value
Butyl 2,3-epoxypropyl Ether (CAS 2426-08-6)	STEL	80 mg/m3
		15 ppm
	TWA	50 mg/m3
		10 ppm
Epichlorhydrin (CAS 106-89-8)	STEL	4 mg/m3
		1 ppm
	TWA	1,9 mg/m3
		0,5 ppm
Silver (CAS 7440-22-4)	TWA	0,1 mg/m3

Malta. OELs. Occupational Exposure Limit Values (L.N. 227. of Occupational Health and Safety Authority Act (CAP. 424), Schedules I and V)

Components	Type	Value
Silver (CAS 7440-22-4)	TWA	0,1 mg/m3

Netherlands. OELs (binding)

Components	Type	Value
Epichlorhydrin (CAS 106-89-8)	TWA	0,19 mg/m3
Silver (CAS 7440-22-4)	TWA	0,1 mg/m3

Norway. Administrative Norms for Contaminants in the Workplace

Components	Type	Value	Form
Butyl 2,3-epoxypropyl Ether (CAS 2426-08-6)	TLV	27 mg/m3	
		5 ppm	
Epichlorhydrin (CAS 106-89-8)	TLV	1,9 mg/m3	
		0,5 ppm	
Silver (CAS 7440-22-4)	TLV	0,1 mg/m3	Dust and fume.

Ordinance of the Minister of Labour and Social Policy on 6 June 2014 on the maximum permissible concentrations and intensities of harmful health factors in the work environment, Journal of Laws 2014, item 817

Components	Type	Value	Form
Butyl 2,3-epoxypropyl Ether (CAS 2426-08-6)	STEL	60 mg/m3	
	TWA	30 mg/m3	
Epichlorhydrin (CAS 106-89-8)	TWA	1 mg/m3	
Silver (CAS 7440-22-4)	TWA	0,05 mg/m3	Inhalable fraction.

Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796)

Components	Type	Value	Form
Butyl 2,3-epoxypropyl Ether (CAS 2426-08-6)	TWA	3 ppm	
Epichlorhydrin (CAS 106-89-8)	TWA	0,5 ppm	
Silver (CAS 7440-22-4)	TWA	0,1 mg/m3	Dust and fume.

Romania. OELs. Protection of workers from exposure to chemical agents at the workplace

Components	Type	Value
Butyl 2,3-epoxypropyl Ether (CAS 2426-08-6)	STEL	200 mg/m3
		38 ppm
	TWA	100 mg/m3
		19 ppm
Epichlorhydrin (CAS 106-89-8)	STEL	4 mg/m3
		0,8 ppm
	TWA	1 mg/m3
		0,2 ppm
Silver (CAS 7440-22-4)	TWA	0,1 mg/m3

Slovakia. OELs for carcinogens and mutagens. Regulation No. 46/2002 on carcinogenic and mutagenic substances

Components	Type	Value
Epichlorhydrin (CAS 106-89-8)	TWA	12 mg/m3
		3 ppm

Slovakia. OELs. Regulation No. 300/2007 concerning protection of health in work with chemical agents

Components	Type	Value
Silver (CAS 7440-22-4)	TWA	0,1 mg/m3

Slovenia. CMR. Protection of workers from exposure to carcinogen and mutagen agents (ULRS 101/2005, as amended)

Components	Type	Value
Epichlorhydrin (CAS 106-89-8)	TWA	12 mg/m3
		3 ppm

Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)

Components	Type	Value
Epichlorhydrin (CAS 106-89-8)	TWA	12 mg/m3
		3 ppm
Silver (CAS 7440-22-4)	TWA	0,01 mg/m3

Spain. Carcinogens and Mutagens with Limit Values (Table 2)

Components	Type	Value
Epichlorhydrin (CAS 106-89-8)	TWA	1,9 mg/m3
		0,5 ppm

Spain. Occupational Exposure Limits

Components	Type	Value
Butyl 2,3-epoxypropyl Ether (CAS 2426-08-6)	TWA	16 mg/m3
		3 ppm
Epichlorhydrin (CAS 106-89-8)	TWA	1,9 mg/m3
		0,5 ppm
Silver (CAS 7440-22-4)	TWA	0,1 mg/m3

Sweden. OELs. Work Environment Authority (AV), Occupational Exposure Limit Values (AFS 2015:7)

Components	Type	Value	Form
Butyl 2,3-epoxypropyl Ether (CAS 2426-08-6)	STEL	80 mg/m3	
		15 ppm	
	TWA	50 mg/m3	
		10 ppm	
Epichlorhydrin (CAS 106-89-8)	Ceiling	4 mg/m3	
		1 ppm	
	TWA	1,9 mg/m3	
		0,5 ppm	
Silver (CAS 7440-22-4)	TWA	0,1 mg/m3	Total dust.

Switzerland. SUVA Grenzwerte am Arbeitsplatz

Components	Type	Value	Form
Butyl 2,3-epoxypropyl Ether (CAS 2426-08-6)	STEL	270 mg/m3	
		50 ppm	
	TWA	135 mg/m3	
		25 ppm	
Epichlorhydrin (CAS 106-89-8)	TWA	8 mg/m3	
		2 ppm	
Silver (CAS 7440-22-4)	STEL	0,8 mg/m3	Inhalable fraction.
	TWA	0,1 mg/m3	Inhalable fraction.

UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value
Epichlorhydrin (CAS 106-89-8)	STEL	5,8 mg/m3
		1,5 ppm
	TWA	1,9 mg/m3
		0,5 ppm
Silver (CAS 7440-22-4)	TWA	0,1 mg/m3

EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU

Components	Type	Value
Silver (CAS 7440-22-4)	TWA	0,1 mg/m3

Biological limit values No biological exposure limits noted for the ingredient(s).

Recommended monitoring procedures Follow standard monitoring procedures.

Derived no effect levels (DNELs) Not available.

Predicted no effect concentrations (PNECs) Not available.

Exposure guidelines

Slovenia. CMR. Protection of workers from exposure to carcinogen and mutagen agents (ULRS 101/2005, as amended)

Epichlorhydrin (CAS 106-89-8)	Can be absorbed through the skin.

Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)

Epichlorhydrin (CAS 106-89-8)	Can be absorbed through the skin.

8.2. Exposure controls

Appropriate engineering controls	Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station and safety shower.

Individual protection measures, such as personal protective equipment

General information	Wear chemical protective equipment that is specifically recommended by the manufacturer. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.
Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin protection	
- Hand protection	Wear appropriate chemical resistant gloves.
- Other	Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
Hygiene measures	Observe any medical surveillance requirements. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.
Environmental exposure controls	Inform appropriate managerial or supervisory personnel of all environmental releases. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	
Physical state	Solid.
Form	Solid.
Colour	Not available.
Odour	Not available.
Odour threshold	Not available.
pH	Not available.
Melting point/freezing point	960,5 °C (1760,9 °F) estimated
Initial boiling point and boiling range	164 °C (327,2 °F) estimated
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Vapour pressure	0,5 hPa estimated
Vapour density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.

Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.

9.2. Other information

Density	10,49 g/cm3 estimated
Specific gravity	10,49 estimated

SECTION 10: Stability and reactivity

10.1. Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
10.2. Chemical stability	Material is stable under normal conditions.
10.3. Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
10.4. Conditions to avoid	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Contact with incompatible materials.
10.5. Incompatible materials	Strong oxidising agents. Ammonia. Chlorine.
10.6. Hazardous decomposition products	No hazardous decomposition products are known.

SECTION 11: Toxicological information

General information	Occupational exposure to the substance or mixture may cause adverse effects.

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	Toxic in contact with skin. Causes skin irritation. May cause an allergic skin reaction.
Eye contact	Causes serious eye irritation.
Ingestion	Harmful if swallowed.
Symptoms	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash.

11.1. Information on toxicological effects

Acute toxicity	Toxic in contact with skin. Harmful if swallowed.

Components	Species	Test Results
Butyl 2,3-epoxypropyl Ether (CAS 2426-08-6)		
Acute		
Dermal		
LD50	Rabbit	0,788 g/kg

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye irritation.
Respiratory sensitisation	Due to partial or complete lack of data the classification is not possible.
Skin sensitisation	May cause an allergic skin reaction.
Germ cell mutagenicity	Suspected of causing genetic defects.
Carcinogenicity	Suspected of causing cancer.

Hungary. 26/2000 EüM Ordinance on protection against and preventing risk relating to exposure to carcinogens at work (as amended)

Epichlorhydrin (CAS 106-89-8)

IARC Monographs. Overall Evaluation of Carcinogenicity

Epichlorhydrin (CAS 106-89-8) 2A Probably carcinogenic to humans.

Slovenia. CMR. Protection of workers from exposure to carcinogen and mutagen agents (ULRS 101/2005, as amended)

Epichlorhydrin (CAS 106-89-8) Carcinogenic, Category 1B.

Reproductive toxicity	Due to partial or complete lack of data the classification is not possible.
Specific target organ toxicity - single exposure	Due to partial or complete lack of data the classification is not possible.

Specific target organ toxicity - repeated exposure	Due to partial or complete lack of data the classification is not possible.
Aspiration hazard	Due to partial or complete lack of data the classification is not possible.
Mixture versus substance information	No information available.
Other information	Not available.

SECTION 12: Ecological information

12.1. Toxicity Toxic to aquatic life with long lasting effects. Based on available data, the classification criteria are not met for hazardous to the aquatic environment, acute hazard.

Product		Species	Test Results
SilverTech Epoxy Kit Part A			
Aquatic			
Crustacea	EC50	Daphnia	0,0127 mg/l, 48 hours estimated
Fish	LC50	Fish	3,8034 mg/l, 96 hours estimated

Components		Species	Test Results
Epichlorhydrin (CAS 106-89-8)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	9,1 - 12,3 mg/l, 96 hours

12.2. Persistence and degradability No data is available on the degradability of any ingredients in the mixture.

12.3. Bioaccumulative potential

Partition coefficient n-octanol/water (log Kow)

Butyl 2,3-epoxypropyl Ether	0,63
Epichlorhydrin	0,45

Bioconcentration factor (BCF) Not available.

12.4. Mobility in soil No data available.

12.5. Results of PBT and vPvB assessment Not a PBT or vPvB substance or mixture.

12.6. Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

12.7. Additional information

Estonia Dangerous substances in groundwater Data

Epichlorhydrin (CAS 106-89-8)	Pesticides (total) 0,5 ug/l
	Pesticides (total) 5 ug/l

Estonia Dangerous substances in soil Data

Epichlorhydrin (CAS 106-89-8)	Synthetic pesticides (total of active substances) 0,5 mg/kg
	Synthetic pesticides (total of active substances) 20 mg/kg
	Synthetic pesticides (total of active substances) 5 mg/kg

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.
EU waste code	The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Disposal methods/information	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Special precautions	Dispose in accordance with all applicable regulations.

SECTION 14: Transport information

ADR

14.1. UN number	UN3077
14.2. UN proper shipping name	Environmentally hazardous substance, solid, n.o.s. (RM Exopy Resin)
14.3. Transport hazard class(es)	
Class	9
Subsidiary risk	-
Label(s)	9
Hazard No. (ADR)	90
Tunnel restriction code	E
14.4. Packing group	III
14.5. Environmental hazards	No.
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

RID

14.1. UN number	UN3077
14.2. UN proper shipping name	Environmentally hazardous substance, solid, n.o.s. (RM Exopy Resin)
14.3. Transport hazard class(es)	
Class	9
Subsidiary risk	-
Label(s)	9
14.4. Packing group	III
14.5. Environmental hazards	No.
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

ADN

14.1. UN number	UN3077
14.2. UN proper shipping name	Environmentally hazardous substance, solid, n.o.s. (RM Exopy Resin)
14.3. Transport hazard class(es)	
Class	9
Subsidiary risk	-
Label(s)	9
14.4. Packing group	III
14.5. Environmental hazards	No.
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IATA

14.1. UN number	UN3077
14.2. UN proper shipping name	Environmentally hazardous substance, solid, n.o.s. (RM Exopy Resin)
14.3. Transport hazard class(es)	
Class	9
Subsidiary risk	-
14.4. Packing group	III
14.5. Environmental hazards	No.
ERG Code	9L
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed with restrictions.
Cargo aircraft only	Allowed with restrictions.

IMDG

14.1. UN number	UN3077
14.2. UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (RM Exopy Resin)

14.3. Transport hazard class(es)

Class 9

Subsidiary risk -

14.4. Packing group III

14.5. Environmental hazards

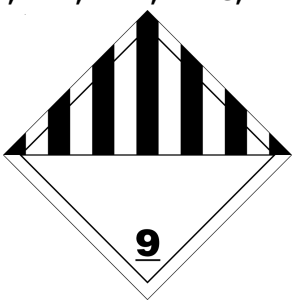
Marine pollutant No.

EmS F-A, S-F

14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Epichlorhydrin

ADN; ADR; IATA; IMDG; RID



General information IMDG Regulated Marine Pollutant.

SECTION 15: Regulatory information

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

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended

Not listed.

Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Epichlorhydrin (CAS 106-89-8)

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.

Epichlorhydrin (CAS 106-89-8)

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

Butyl 2,3-epoxypropyl Ether (CAS 2426-08-6)
Epichlorhydrin (CAS 106-89-8)
RM Exopy Resin (CAS 25068-38-6)

Other regulations	The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.
National regulations	According to Directive 92/85/EEC as amended, pregnant women should not work with the product, if there is the least risk of exposure. Young people under 18 years old are not allowed to work with this product according to EU Directive 94/33/EC on the protection of young people at work, as amended. Follow national regulation for work with chemical agents in accordance with Directive 98/24/EC, as amended.
15.2. Chemical safety assessment	No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations	Not available.
References	Not available.
Training information	Follow training instructions when handling this material.
Disclaimer	Materion Advanced Materials Group cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. This document has been prepared using data from sources considered to be technically reliable and the information is believed to be correct. Materion makes no warranties, expressed or implied, as to the accuracy of the information contained herein. Materion cannot anticipate all conditions under which this information and its products may be used and the actual conditions of use are beyond its control. The user is responsible to evaluate all available information when using this product for any particular use and to comply with all Federal, State, Provincial and Local laws, statutes and regulations.