



SAFETY DATA SHEET

MATERION

1. Product and company identification

Name of the chemical	MEG-150 Epoxy
Other means of identification	
SDS number	F01
Recommended use of the chemical and restrictions on use	
Recommended use	Manufacture of computer, electronic and optical products, electrical equipment Scientific research and development Other: Manufacture of medical and defense equipment
Recommended restrictions	Professional uses: Public domain (administration, education, entertainment, services, craftsmen) Consumer uses: Private households (= general public = consumers)
Manufacturer/Importer/Supplier/ Distributor information	Materion Advanced Materials
Address	6070 Parkland Boulevard Mayfield Heights OH 44124 United States
Telephone	1.216.383.4019
E-mail	ehs@materion.com
Contact person	Theodore Knudson
Emergency telephone number	See Section 16.

2. Hazards identification

Hazard classification	
Physical hazards	Not classified.
Health hazards	Acute toxicity, dermal Category 4 Skin corrosion/irritation Category 2 Sensitization, skin Category 1B Germ cell mutagenicity Category 2 Carcinogenicity Category 2 Specific target organ toxicity, single exposure Category 1
Environmental hazards	Not classified.

Label elements

Symbols



Signal word

Danger

Hazard statement

Suspected of causing cancer. Suspected of causing genetic defects. Causes skin irritation.
Harmful in contact with skin. May cause an allergic skin reaction. Causes damage to organs.

Precautionary statement

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Contaminated work clothing should not be allowed out of the workplace.

Response

If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse. If exposed or concerned: Get medical advice/attention.

Storage

Store locked up.

Disposal

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

Other hazards

None known.

Supplemental information

For further information, please contact the Product Stewardship Department at +1.216.383.4019.

3. Composition/information on ingredients

Mixture

Chemical properties	CAS Number	Concentration (%)
Polyamide	63428-84-2	45 - 75
Diglycidyl Resorcinol Ether	101-90-6	20 - 22
PROPRIETARY INGREDIENTS	N/A	7 - 13
Methanol	67-56-1	0 - 2
Titanium Oxide (TiO ₂)	13463-67-7	0 - 1.5

4. First aid measures

First aid measures for different exposure routes

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.
Skin contact	If skin irritation occurs: Get medical advice/attention. Wash off with soap and water. Wash contaminated clothing before reuse. Get medical attention if irritation develops and persists.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists.
Ingestion	No adverse effects due to ingestion are expected.
Most important symptoms and effects	May cause an allergic skin reaction. Prolonged exposure may cause chronic effects.
Personal protection for first-aid responders	If you feel unwell, seek medical advice (show the label where possible). Wash contaminated clothing before reuse.
Notes to physician	Keep victim warm. Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed. Treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital.

5. Fire-fighting measures

Extinguishing media	Water fog. Water spray. Dry chemical powder. Carbon dioxide (CO ₂).
Extinguishing media to avoid	Do not use a solid water stream as it may scatter and spread fire.
Specific hazards during fire fighting	None known.
Special fire fighting procedures	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk. Use water spray to cool unopened containers.
Protection of fire-fighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
General fire hazards	None known.

6. Accidental release measures

Personal precautions	Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. For personal protection, see section 8 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.
Spill cleanup methods	Sweep up or vacuum up spillage and collect in suitable container for disposal. Collect and dispose of spillage as indicated in section 13 of the SDS. Flush area with water.

7. Handling and storage

Handling	Wash hands thoroughly after handling. Wash contaminated clothing before reuse. Obtain special instructions before use. Wear appropriate personal protective equipment. Do not eat, drink or smoke when using the product. Observe good industrial hygiene practices.
Storage	Store in accordance with local/regional/national/international regulation.

8. Exposure controls/personal protection

Exposure limits

OELs. (Standards on Workplace Atmosphere of Dangerous and Hazardous Materials)

Components	Type	Value
Methanol (CAS 67-56-1)	TWA	262 mg/m3 200 ppm
Titanium Oxide (TiO ₂) (CAS 13463-67-7)	STEL	15 mg/m3
	TWA	10 mg/m3

US. ACGIH Threshold Limit Values

Components	Type	Value
Methanol (CAS 67-56-1)	STEL	250 ppm
	TWA	200 ppm
Titanium Oxide (TiO ₂) (CAS 13463-67-7)	TWA	10 mg/m3

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Methanol (CAS 67-56-1)	15 mg/l	Methanol	Urine	*

* - For sampling details, please see the source document.

Exposure guidelines

Taiwan OELs: Skin designation

Methanol (CAS 67-56-1) Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Methanol (CAS 67-56-1) Danger of cutaneous absorption

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.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

Other Avoid contact with the skin. Wear suitable protective clothing.

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

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations 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. Keep away from food and drink. Wash hands after handling and before eating. Observe any medical surveillance requirements. When using do not smoke. Contaminated work clothing should not be allowed out of the workplace. When using, do not eat, drink or smoke.

9. Physical and chemical properties

Appearance

Physical state Solid.

Form Film.

Color White.

Odor None.

Odor threshold Not applicable.

Melting point/freezing point -144.04 °F (-97.8 °C) estimated / Not applicable.

pH Not applicable.

Boiling point, initial boiling point, and boiling range	Not applicable.
Flammability (solid, gas)	None known.
Flash point	Not applicable.
Decomposition temperature	Not applicable.
Auto-ignition temperature	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not applicable.
Flammability limit - lower (%) temperature	Not applicable.
Flammability limit - upper (%)	Not applicable.
Flammability limit - upper (%) temperature	Not applicable.
Explosive limit - lower (%)	Not applicable.
Explosive limit - lower (%) temperature	Not applicable.
Explosive limit - upper (%)	Not applicable.
Explosive limit - upper (%) temperature	Not applicable.
Vapor pressure	Not applicable.
Vapor density	Not applicable.
Density	1.36 g/cm ³ estimated
Solubility(ies)	
Solubility (water)	Negligible.
Partition coefficient (n-octanol/water)	Not applicable.
Evaporation rate	Not applicable.
Other data	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Viscosity	Not applicable.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Stability	Material is stable under normal conditions.
Possibility of hazardous reactions	None.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	At thermal decomposition temperatures, carbon monoxide and carbon dioxide. Ammonia. Nitrogen oxides (NO _x).

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause irritation to the respiratory system.
Skin contact	Causes skin irritation. May cause an allergic skin reaction. Harmful in contact with skin.
Eye contact	Causes serious eye irritation. Direct contact with eyes may cause temporary irritation.
Ingestion	May be harmful if swallowed.

Symptoms May cause an allergic skin reaction.

Information on toxicological effects

Acute toxicity	Harmful in contact with skin.
Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye irritation. Direct contact with eyes may cause temporary irritation.
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	May cause an allergic skin reaction.
Germ cell mutagenicity	Suspected of causing genetic defects.
Carcinogenicity	Suspected of causing cancer.

ACGIH Carcinogens

Titanium Oxide (TiO₂) (CAS 13463-67-7) A4 Not classifiable as a human carcinogen.

IARC Monographs. Overall Evaluation of Carcinogenicity

Diglycidyl Resorcinol Ether (CAS 101-90-6) 2B Possibly carcinogenic to humans.

Titanium Oxide (TiO₂) (CAS 13463-67-7) 2B Possibly carcinogenic to humans.

Reproductive toxicity	Not classified.
Specific target organ toxicity - single exposure	Causes damage to organs.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.
Chronic effects	Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity

Product	Species	Test Results	
MEG-150 Epoxy			
Aquatic			
<i>Acute</i>			
Crustacea	EC50	Daphnia	61866.1875 mg/l, 48 hours estimated
Fish	LC50	Fish	62590.7539 mg/l, 96 hours estimated

Components	Species	Test Results	
Methanol (CAS 67-56-1)			
Aquatic			
<i>Acute</i>			
Crustacea	EC50	Water flea (Daphnia magna)	> 10000 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	> 100 mg/l, 96 hours
Titanium Oxide (TiO ₂) (CAS 13463-67-7)			
Aquatic			
<i>Acute</i>			
Crustacea	EC50	Water flea (Daphnia magna)	> 1000 mg/l, 48 hours
Fish	LC50	Mummichog (Fundulus heteroclitus)	> 1000 mg/l, 96 hours

Persistence and degradability Not available.

Bioaccumulation

Bioaccumulative potential

Octanol/water partition coefficient log Kow

Methanol -0.77

Mobility in soil Not available.

Other hazardous effects Not available.

13. Disposal considerations

Disposal instructions	Dispose of contents/container in accordance with local/regional/national/international regulations. Collect and reclaim or dispose in sealed containers at licensed waste disposal site.
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	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.
Local disposal regulations	Dispose in accordance with all applicable regulations.

14. Transport information

IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not available.

15. Regulatory information

Applicable regulations	This material safety data sheet was prepared in accordance with the Regulation of Labeling and Hazard Communication of Hazardous Chemicals. Methods and Facilities Standards for the Storage, Clearance and Disposal of Industrial Waste Regulations for the Labeling and Hazard Communication of Hazardous Chemicals Toxic Chemical Substances Control Act Toxic Chemical Substances Labeling and Materials Safety Data Sheets Regulations
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Methods and Facilities Standards for the Storage, Clearance and Disposal of Industrial Waste

Not listed.

Priority Management Chemical List (Regulations on Handling Priority Managed Chemicals), as amended

Methanol (CAS 67-56-1)

Toxic Chemical Substances (TCS) List (EPA Toxic Substances Notice No. 0960095331E, Tables 1-3, Dec. 17, 2007, as amended)

Not listed.

Standards on Workplace Atmosphere of Dangerous and Hazardous Materials

Methanol (CAS 67-56-1)	Listed.
Titanium Oxide (TiO ₂) (CAS 13463-67-7)	Listed.

Regulations for Governing Prevention of Organic Solvent Poisoning

Methanol (CAS 67-56-1)	Type 2 Organic Solvent
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GHS Classification List: GHS implementation phase 1, 2 and 3 (CLA No. 0980145063, 0990146707, and 1020146801)

Diglycidyl Resorcinol Ether (CAS 101-90-6)
Methanol (CAS 67-56-1)

International regulations

Stockholm Convention

Not applicable.

Rotterdam Convention

Not applicable.

Montreal Protocol

Not applicable.

Kyoto protocol

Not applicable.

Basel Convention

Not applicable.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information

References

NLM: Hazardous Substances Data Base
EPA: AQUIRE database
US. IARC Monographs on Occupational Exposures to Chemical Agents
ACGIH
Taiwan. Industrial Precursor Chemicals (Categories and Regulations Governing Inspection and Declaration of Industrial Precursor Chemicals, MOEA Decree No. 87, as amended)
Taiwan. OELs (Standards of Permissible Exposure Limits at Workplace), as amended
Taiwan. Dangerous Materials (Regulations for the Labeling and Hazard Communication of Hazardous Chemicals), as amended
Taiwan. Toxic Chemical Substances (TCS) (List of Toxic Chemical Substances announced by the Environmental Protection Administration)
Taiwan. Toxic Materials (Toxic and Concerned Chemical Substances Control Act)

Prepared by

Not available.