

SAFETY DATA SHEET

1. IDENTIFICATION

Product Name: HMF 934 Carbon Prepreg
Synonyms: None
Chemical Family: Epoxy
Molecular Formula: Mixture
Molecular Weight: Mixture
Intended/Recommended Use: Engineered materials

CYTEC INDUSTRIES INC., FIVE GARRET MOUNTAIN PLAZA, WOODLAND PARK, NEW JERSEY 07424, USA
For Product and all Non-Emergency Information call 1-800/652-6013. Outside the USA and Canada call 1-973/357-3193.

EMERGENCY PHONE (24 hours/day) - For emergency only involving spill, leak, fire, exposure or accident call:

Asia Pacific:

Australia - +61-3-9663-2130 or 1800-033-111

China (PRC) - +86 0532 83889090 (NRCC)

New Guinea - +61-3-9663-2130

New Zealand - +61-3-9663-2130 or 0800-734-607

All Others - +65 3158 1074 (Carechem24 Singapore)

Canada: +1-905-356-8310 (Cytec Welland, Canada plant)

Europe/Africa/Middle East (Carechem24 UK):

Europe, Middle East, Africa, Israel - +44 (0) 1235 239 670

Middle East, Africa (Arabic speaking countries) - +44 (0) 1235 239 671

Latin America:

Brazil - 0800 7077 022 (SUATRANS)

Chile - +56-2-247-3600 (CITUC QUIMICO)

All Others - +52-376-73 74122 (Cytec Atequiza, Mexico plant)

USA: +1-703-527-3887 or 1-800-424-9300 (CHEMTREC #CCN6083)

2. HAZARDS IDENTIFICATION

GHS Classification

Carcinogenicity Hazard Category 1B

Germ Cell Mutagenicity Hazard Category 2

Reproductive Toxicant Category 1B

Skin Sensitizer Hazard Category 1B

LABEL ELEMENTS



Signal Word

Danger

Hazard Statements

May cause cancer
 Suspected of causing genetic defects
 May damage fertility or the unborn child
 May cause an allergic skin reaction

Precautionary Statements

Obtain special instructions before use.
 Wear protective gloves/protective clothing/eye protection/face protection.
 Avoid breathing dust/fume/gas/mist/vapours/spray.
 Contaminated work clothing should not be allowed out of the workplace.
 IF exposed or concerned: Get medical advice/attention.
 IF ON SKIN: Wash with plenty of soap and water.
 If skin irritation or rash occurs: Get medical advice/attention.
 Specific treatment (see supplemental first aid instructions on this label).
 Wash contaminated clothing before reuse.
 Store locked up.
 Dispose of contents/container in accordance with local and national regulations.

Hazards Not Otherwise Classified (HNOC), Other Hazards

By excessive exposure to dust, eye and respiratory tract irritation is possible.
 Polymerization may occur from excessive heat, contamination or exposure to direct sunlight.

3. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS

Component / CAS No.	%	GHS Classification	Carcinogen
Carbon / graphite fibers (PAN based) 70892-43-2	60 - 90	Not Classified	-
Tetraglycidyl MDA 28768-32-3	10 - 30	Muta. 2 (H341) Skin Sens. 1B (H317) Aquatic Acute 2 (H401) Aquatic Chronic 2 (H411)	-
Aniline derivative -	5 - 10	Acute Tox. 4 (H302)	-
Aromatic Glycidyl Ester -	1 - 5	Acute Tox. 4 (H302) Eye Dam. 1 (H318) Skin Irrit. 2 (H315) Skin Sens. 1B (H317)	-
Acetone 67-64-1	1-5	Flam. Liq. 2 (H225) STOT SE 3 (H336) Skin Irrit. 3 (H316) Eye Irrit. 2A (H319)	-
Glycidol 556-52-5	<0.2	Carc. 1B (H350) Muta. 2 (H341) Repr. 1B (H360F) Acute Tox. 4 (H302) Acute Tox. 4 (H312) Acute Tox. 3 (H331) STOT SE 3 (H335) Skin Irrit. 2 (H315) Eye Irrit. 2A (H319)	IARC 2A NTP ACGIH A3

The specific chemical identity and/or exact percentage of composition for one or more ingredients has been withheld as a trade secret.

Additional GHS classification or other information may be included in this section but has not been adopted by OSHA. See Section 16 for full text of H phrases.

4. FIRST AID MEASURES

DESCRIPTION OF FIRST AID MEASURES

Eye Contact:

Not an expected route of exposure.

Skin Contact:

Wash immediately with plenty of water and soap. Flush with a continuous flow of lukewarm water until material is removed. Remove contaminated clothing and shoes without delay. Obtain medical attention. Do not reuse contaminated clothing without laundering. Destroy or thoroughly clean shoes before reuse.

Ingestion:

Not an expected route of exposure.

Inhalation:

Remove to fresh air. If breathing is difficult, give oxygen. Obtain medical advice if there are persistent symptoms.

MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

None known

INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDS

Not applicable

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:

Use water spray or fog, carbon dioxide or dry chemical.

Protective Equipment:

Firefighters, and others exposed, wear self-contained breathing apparatus. Wear full firefighting protective clothing. See MSDS Section 8 (Exposure Controls/Personal Protection).

Special Hazards:

None known

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Where exposure level is not known, wear approved, positive pressure, self-contained respirator. Where exposure level is known, wear approved respirator suitable for level of exposure. Refer to Section 8 (Exposure Controls/Personal Protection) for appropriate personal protective equipment.

Methods For Cleaning Up:

Sweep up into containers for disposal. Flush spill area with water.

References to other sections:

See Sections 8 and 13 for additional information.

7. HANDLING AND STORAGE

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HANDLING

Precautions: Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

Special Handling Statements: Heating or curing of unused rolls or sheets of product prior to disposal is not recommended. Heating a large mass of product can lead to a rapid decomposition reaction, generating heat, smoke and possibly fire. This material contains a small amount of flammable or combustible liquid and vapor. Keep away from heat, sparks, and flame.

STORAGE

Store in accordance with local, state, and federal regulations.

Storage Temperature: Store at $<-18\text{ }^{\circ}\text{C}$ $-0.4\text{ }^{\circ}\text{F}$

Reason: Quality.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures:

Where this material is not used in a closed system, good enclosure and local exhaust ventilation should be provided to control exposure when spraying or curing at elevated temperatures.

Respiratory Protection:

Where exposures are below the established exposure limit, no respiratory protection is required. Where exposures exceed the established exposure limit, use respiratory protection recommended for the material and level of exposure. A full facepiece respirator also provides eye and face protection. Cutting, grinding or sanding of parts fabricated after curing may create respirable dust particles. Respiratory protection appropriate for this dust may be required. Refer to components listed above for potential hazardous components in the dust.

Eye Protection:

Wear eye/face protection such as chemical splash proof goggles or face shield. Eyewash equipment and safety shower should be provided in areas of potential exposure.

Skin Protection:

Avoid skin contact. Wear impermeable gloves and suitable protective clothing. Barrier creams may be used in conjunction with the gloves to provide additional skin protection. Since this product is absorbed through the skin, care must be taken to prevent skin contact and contamination of clothing.

Hand Protection:

Wear impermeable gloves. Consider the porosity and elasticity data of the glove manufacturer and the specific conditions in the work place. Barrier creams may help to protect the exposed areas of the skin, they should however not be applied once exposure has occurred.

Additional Advice:

Food, beverages, and tobacco products should not be carried, stored, or consumed where this material is in use. Before eating, drinking, or smoking, wash face and hands thoroughly with soap and water.

Exposure Limit(s)

67-64-1	Acetone	
OSHA (PEL):		1000 ppm (TWA) 2400 mg/m ³ (TWA)
ACGIH (TLV):		750 ppm (STEL) 500 ppm (TWA)
Other Value:		Not established

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	black
Appearance:	resin coated fibers or fabric
Odor:	faint epoxy
Boiling Point:	Not applicable
Melting Point:	Not applicable
Vapor Pressure:	Not applicable
Specific Gravity/Density:	Not available
Vapor Density:	Not applicable
Percent Volatile (% by wt.):	0 - 3
pH:	Not applicable
Saturation In Air (% By Vol.):	Not applicable
Evaporation Rate:	Not applicable
Solubility In Water:	Not applicable
Volatile Organic Content:	Not applicable
Flash Point:	Not applicable
Flammable Limits (% By Vol):	Not applicable
Autoignition Temperature:	Not available
Decomposition Temperature:	Not available
Partition coefficient (n-octanol/water):	Not applicable
Odor Threshold:	Not available
Viscosity (Kinematic):	Not applicable

10. STABILITY AND REACTIVITY

Stability:	Stable
Conditions To Avoid:	None known
Polymerization:	Will not occur
Conditions To Avoid:	None known
Materials To Avoid:	Strong acids, bases, oxidizing agents.
Hazardous Decomposition Products:	smoke acid vapors and fumes hydrocarbons oxides of carbon oxides of nitrogen hydrogen chloride

11. TOXICOLOGICAL INFORMATION

PRODUCT TOXICITY INFORMATION

Likely Routes of Exposure: Skin, Respiratory System.

ACUTE TOXICITY DATA

oral	rat	Acute LD50	Not an expected route of exposure
dermal	rabbit	Acute LD50	>2000 mg/kg
inhalation	rat	Acute LC50 4 hr	Not an expected route of exposure

LOCAL EFFECTS ON SKIN AND EYE

Acute Irritation	dermal	Not irritating
Acute Irritation	eye	Not an expected route of exposure

ALLERGIC SENSITIZATION

Sensitization	dermal	Sensitizing
Sensitization	inhalation	No data

GENOTOXICITY**Assays for Gene Mutations**

Ames Salmonella Assay	No data
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OTHER INFORMATION

The product toxicity information above has been estimated.

HAZARDOUS INGREDIENT TOXICITY DATA

Carbon fibers produced no skin irritation in rabbits after a 24-hour contact. Instillation of PAN-based carbon fibers into rabbit eyes produced severe irritation. No abnormal histopathology has been noted following subchronic inhalation studies in rats with 20 mg/m³ of either 5 or 7 micron diameter PAN-based carbon fibers and the response in the lung is characteristic of a response to a biologically inert dust. In a lifetime skin painting study with PAN-based carbon fibers, no skin tumors were produced. Additionally, PAN-based carbon fibers were not mutagenic in bacterial or mammalian cell culture tests.

Tetraglycidylbis (p-aminophenyl) methane has acute oral (rat) and dermal (rabbit) LD50 values of >10,000 mg/kg and >3000 mg/kg, respectively. Direct contact with this material can cause mild eye and skin irritation. This material caused skin sensitization in guinea pigs and humans. This material was found to be mutagenic in the Ames test and the mouse lymphoma test, but was negative in other mutagenicity tests including the cell transformation test. This material demonstrated in vivo mutagenic activity in a mouse Micronucleus test. In another study with rats, the LD50 was reported to be >5,000 mg/kg. This compound caused severe eye irritation in one laboratory animal test and mild eye irritation in other tests.

Aniline derivative has acute oral (rat) and dermal (rabbit) LD50 values of >600 mg/kg and greater than 4000 mg/kg, respectively. An acute oral (mouse) LD50 value of 250 mg/kg has also been reported. In laboratory animal tests, this material did not cause primary skin irritation. Exposure may also cause sore throat, headache, weakness, and possibly methemoglobinemia or other blood disorders. In lifetime feeding studies no evidence of carcinogenicity was seen in mice of either sex or female rats. However, male rats were observed to have an increased incidence of mesenchymal tumors of the spleen. This material was not mutagenic to Salmonella typhimurium. This material adversely affected reproductive potency in male rats. This material is reported to have shown positive results in in vitro mutagenicity tests with human cell cultures. Subacute ingestion caused liver damage in laboratory animals. It has been that this has the potential to cause allergic skin reactions.

Aromatic glycidyl ester has acute oral (rat) and dermal (rabbit) values of >500 mg/kg and >2000 mg/kg respectively. This material causes moderate skin and severe eye irritation. Aromatic glycidyl ester may cause skin sensitization.

Acetone has acute oral (rat) and dermal (rabbit) LD50 values of 5.8 g/kg and 15.7 g/kg, respectively. The LC50 (rat) for acetone vapor after a four hour exposure is 16,000 ppm (37.95 mg/L). Literature reports a LC50 inhalation (4-hr, rat) value of 29,900 ppm and acute ingestion can cause central nervous system effects. Chronic exposure to vapor may cause dryness of mouth, headache, dizziness, nausea, and loss of coordination. Liquid acetone is moderate to severely irritating to the eyes and mildly irritating to the skin. Repeated dermal application of acetone produced cataracts in the eyes of laboratory animals. High concentrations of acetone caused fetotoxic effects in laboratory animals tests. Acetone has shown positive results in in vitro screening tests for mutagenicity. Literature reports that in laboratory animal tests, acute ingestion has caused CNS effects and chronic ingestion has caused kidney and male reproductive organ effects.

Glycidol (CAS# 556-52-5) has acute oral (rat) and dermal (rabbit) LD50 values of 420 mg/kg and 1980 mg/kg, respectively. The 4 hr acute inhalation (rat) LC50 is 580 ppm. This material is readily absorbed through the skin and can cause severe irritation to the mucous membranes, upper respiratory tract, eyes, and skin. Direct contact with this material may cause skin sensitization and dermatitis on prolonged exposure. Inhalation overexposure may cause CNS depression. Glycidol was mutagenic in a variety of in vitro and in vivo short-term tests. Mutagenic activity was observed in the Ames Test, in the mouse lymphoma assay and the incidence of micronucleated polychromatic erythrocytes was increased in the Mouse Micronucleus Assay. This material was demonstrated to produce clear evidence of carcinogenic activity in male and female rats and mice when test by NTP. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans.

California Proposition 65 Warning (applicable in California only) - This product contains (a) chemical(s) known to the State of California to cause cancer and birth defects or other reproductive harm.

12. ECOLOGICAL INFORMATION

TOXICITY, PERSISTENCE AND DEGRADABILITY, BIOACCUMULATIVE POTENTIAL, MOBILITY IN SOIL, OTHER ADVERSE EFFECTS

Environmental exposure from substances of this preparation are limited due to the physical form of the product. This material is not classified as dangerous for the environment.

RESULTS OF PBT AND vPvB ASSESSMENT

Not determined

HAZARDOUS INGREDIENT TOXICITY DATA

Component/CAS No.	Toxicity to Algae	Toxicity to Fish	Toxicity to Water Flea
Carbon / graphite fibers (PAN based) 70892-43-2	Not available	Not available	Not available
Tetraglycidyl MDA 28768-32-3	Not available	Not available	Not available
Aniline derivative	Not available	Not available	Not available
Aromatic Glycidyl Ester	Not available	Not available	Not available

Component / CAS No.	Toxicity to Algae	Toxicity to Fish	Toxicity to Water Flea
Acetone 67-64-1	Not available	LC50 4.74 - 6.33 mL/L - Oncorhynchus mykiss (96h) LC50 6210 - 8120 mg/L - Pimephales promelas (96h) LC50 = 8300 mg/L - Lepomis macrochirus (96h)	EC50 10294 - 17704 mg/L - Daphnia magna (48h) EC50 12600 - 12700 mg/L - Daphnia magna (48h)
Glycidol 556-52-5	Not available	Not available	Not available

13. DISPOSAL CONSIDERATIONS

The information on RCRA waste classification and disposal methodology provided below applies only to the product, as supplied. If the material has been altered or contaminated, or it has exceeded its recommended shelf life, the guidance may be inapplicable. Hazardous waste classification under federal regulations (40 CFR Part 261 et seq) is dependent upon whether a material is a RCRA "listed hazardous waste" or has any of the four RCRA "hazardous waste characteristics." Refer to 40 CFR Part 261.33 to determine if a given material to be disposed of is a RCRA "listed hazardous waste"; information contained in Section 15 of this MSDS is not intended to indicate if the product is a "listed hazardous waste." RCRA Hazardous Waste Characteristics: There are four characteristics defined in 40 CFR Section 261.21-61.24: Ignitability, Corrosivity, Reactivity, and Toxicity. To determine Ignitability, see Section 9 of this MSDS (flash point). For Corrosivity, see Sections 9 and 14 (pH and DOT corrosivity). For Reactivity, see Section 10 (incompatible materials). For Toxicity, see Section 3 (composition). Federal regulations are subject to change. State and local requirements, which may differ from or be more stringent than the federal regulations, may also apply to the classification of the material if it is to be disposed. The Company encourages the recycle, recovery and reuse of materials, where permitted, as an alternate to disposal as a waste. The Company recommends that organic materials classified as RCRA hazardous wastes be disposed of by thermal treatment or incineration at EPA approved facilities. The Company has provided the foregoing for information only; the person generating the waste is responsible for determining the waste classification and disposal method.

14. TRANSPORT INFORMATION

This section provides basic shipping classification information. Refer to appropriate transportation regulations for specific requirements.

US DOT

Dangerous Goods? Not applicable/Not regulated

TRANSPORT CANADA

Dangerous Goods? Not applicable/Not regulated

ICAO / IATA

Dangerous Goods? Not applicable/Not regulated

IMO

Dangerous Goods? Not applicable/Not regulated

15. REGULATORY INFORMATION

Inventory Information

United States (USA): All components of this product are included on the TSCA Chemical Inventory or are not required to be listed on the TSCA Chemical Inventory.

Canada: All components of this product are included on the Domestic Substances List (DSL) or are not required to be listed on the DSL.

European Economic Area (including EU): This product is an article that does not intentionally release substances under normal conditions of use and is therefore exempt from the registration requirements under the REACH Regulation (EC) No. 1907/2006.

Australia: All components of this product are included in the Australian Inventory of Chemical Substances (AICS) or are not required to be listed on AICS.

China: All components of this product are included on the Chinese inventory or are not required to be listed on the Chinese inventory.

Japan: All components of this product are included on the Japanese (ENCS) inventory or are not required to be listed on the Japanese inventory.

Korea: All components of this product are included on the Korean (ECL) inventory or are not required to be listed on the Korean inventory.

Philippines: All components of this product are included on the Philippine (PICCS) inventory or are not required to be listed on the Philippine inventory.

OTHER ENVIRONMENTAL INFORMATION

The following components of this product may be subject to reporting requirements pursuant to Section 313 of CERCLA (40 CFR 372), Section 12(b) of TSCA, or may be subject to release reporting requirements (40 CFR 307, 40 CFR 311, etc.) See Section 13 for information on waste classification and waste disposal of this product.

Component / CAS No.	%	TPQ (lbs)	RQ(lbs)	S313	TSCA 12B
Acetone 67-64-1	1-5	None	5000	No	No
Glycidol 556-52-5	<0.2	None	0	Yes	No

PRODUCT HAZARD CLASSIFICATION UNDER SECTION 311 OF SARA

- Acute
- Chronic

16. OTHER INFORMATION

NFPA Hazard Rating (National Fire Protection Association)

Health: 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

Fire: 1 - Materials that must be preheated before ignition can occur.

Instability: 0 - Materials that in themselves are normally stable, even under fire exposure conditions.

Reasons For Issue: Revised Section 3
Revised Section 11

Date Prepared: 01/06/2014
Date of last significant revision: 01/06/2014

Component Hazard Phrases
Tetraglycidyl MDA

- H317 - May cause an allergic skin reaction.
- H341 - Suspected of causing genetic defects.
- H411 - Toxic to aquatic life with long lasting effects.

Aniline derivative

- H302 - Harmful if swallowed.

Aromatic Glycidyl Ester

- H302 - Harmful if swallowed.
- H315 - Causes skin irritation.
- H317 - May cause an allergic skin reaction.
- H318 - Causes serious eye damage.

Acetone

- H225 - Highly flammable liquid and vapor.
- H316 - Causes mild skin irritation.
- H319 - Causes serious eye irritation.
- H336 - May cause drowsiness or dizziness.

Glycidol

- H302 - Harmful if swallowed.
- H312 - Harmful in contact with skin.
- H315 - Causes skin irritation.
- H319 - Causes serious eye irritation.
- H331 - Toxic if inhaled.
- H335 - May cause respiratory irritation.
- H341 - Suspected of causing genetic defects.
- H350 - May cause cancer.
- H360F - May damage fertility.

Prepared By: Legal & Compliance Services; E-mail: custinfo@cytec.com

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