



SAFETY DATA SHEET

HexPly® M77HFS (White)

1. Identification

Product identifier

Product name HexPly® M77HFS (White)
Chemical name Modified Epoxy Resin Prepreg
Product number 21430US-2

Recommended use of the chemical and restrictions on use

Application Formulated product for Industrial applications
Uses advised against Use only for intended applications.

Details of the supplier of the safety data sheet

Supplier Hexcel Corporation
6700 West 5400 South
West Valley City, UT 84118-7678
USA
Tel: ++801 252 3400
Tel: ++800 987 0658

Contact Person 6700 West 5400 South, West Valley City, UT 84118-7678, USA ++801 252 3400, 11711
Dublin Blvd, Dublin, California, USA ++925 551 4900, SDSUSOffice@hexcel.com

Emergency telephone number

Emergency telephone To be used only for advice on chemical emergencies, spillages, fires or First Aid:
For emergencies in US/Canada: CHEMTREC – 800 424 9300
For emergencies in rest of the world: CARECHEM24 – +44 (0) 1235 239 670

2. Hazard(s) identification

Classification of the substance or mixture

OSHA Regulatory Status This Product is Hazardous under the OSHA Hazard Communication Standard.
Physical hazards Combustible Dust - USH01
Health hazards Skin Irrit. 2 - H315 Eye Irrit. 2A - H319 Skin Sens. 1 - H317
Environmental hazards Not Classified

Physicochemical Warning! Heating may cause a fire

Label elements

Pictogram



Signal word Warning

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Hazard statements	H315 Causes skin irritation. H319 Causes serious eye irritation. H317 May cause an allergic skin reaction. USH01 May form combustible dust concentrations in air.
Precautionary statements	P261 Avoid breathing dust. P264 Wash contaminated skin thoroughly after handling. P272 Contaminated work clothing must not be allowed out of the workplace. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. 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. P321 Specific treatment (see medical advice on this label). P332+P313 If skin irritation occurs: 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. P362+P364 Take off contaminated clothing and wash it before reuse. P501 Dispose of contents/ container in accordance with national regulations.
Contains	BISPHENOL A EPOXY RESIN (Number average MW ≤ 700), EPOXY PHENOL NOVOLAK RESIN

Other hazards

Warning! Will become self-reactive under conditions of excessive temperature resulting an uncontrolled exothermic reaction.

Warning! May cause eye, skin and upper respiratory tract irritation, allergic skin reaction, dermatitis and possible sensitization. Vapor or fumes evolved during use and/or heating or curing the product may cause respiratory tract and eye irritation. Dust or particulates from machining, grinding or sawing the cured product may causes skin, eye and upper respiratory tract irritation, allergic skin reaction and possible sensitization.

3. Composition/information on ingredients

Mixtures

BISPHENOL A EPOXY RESIN (Number average MW ≤ 700)	30-60%
CAS number: 25068-38-6	
Classification	
Skin Irrit. 2 - H315	
Eye Irrit. 2A - H319	
Skin Sens. 1 - H317	
Aquatic Chronic 2 - H411	
EPOXY PHENOL NOVOLAK RESIN	30-60%
CAS number: 28064-14-4	
Classification	
Skin Irrit. 2 - H315	
Eye Irrit. 2A - H319	
Skin Sens. 1 - H317	
Aquatic Chronic 2 - H411	

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ACETONE	1-5%
CAS number: 67-64-1	
Classification	
Flam. Liq. 2 - H225	
Eye Irrit. 2A - H319	
STOT SE 3 - H336	
TITANIUM DIOXIDE	<1%
CAS number: 13463-67-7	
Classification	
Not Classified	

The full text for all hazard statements is displayed in Section 16.

Composition comments The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with 29 CFR §1910.1200.

4. First-aid measures

Description of first aid measures

Inhalation	With any sign of respiratory distress, affected persons should be taken into fresh air and made to rest while medical attention is sought.
Ingestion	Immediately rinse the mouth repeatedly with water, if swallowing has occurred, do not induce vomiting. If requested, give affected person sips of water. Seek medical attention immediately. If vomiting does occur do not allow the affected person to inhale their vomit. Do not give anything by mouth to an unconscious person.
Skin Contact	With uncured material, immediately wash the affected area with warm, soapy water then clean the skin with resin removing cream, followed by further washing with warm soapy water. Do not use solvents. If irritation persists, seek medical attention.
Eye contact	Flush with water for at least 15 minutes and seek medical attention if irritation persists.

Most important symptoms and effects, both acute and delayed

Inhalation	Inhalation of dust during cutting, grinding or sanding operations involving this product may cause irritation of the respiratory tract.
Skin contact	Contact with dust may cause mechanical irritation.

Indication of immediate medical attention and special treatment needed

Notes for the doctor No specific recommendations. If in doubt, get medical attention promptly.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.

Special hazards arising from the substance or mixture

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Specific hazards Warning! Dust generated from machining, grinding or sanding the cured product may be combustible and could result in fire and/or explosion should the necessary dust concentration in air and ignition source be present. Carbon fibers contained in some products are electrically conductive and if released during combustion may present a hazard to unprotected electrical apparatus.

Hazardous combustion products The products of combustion and decomposition depend on other materials present in the fire and the actual conditions of the fire. Burning will release carbon dioxide, water, carbon monoxide and compounds of nitrogen.

Advice for firefighters

Special protective equipment for firefighters Avoid exposure through use of a self-contained, positive-pressure breathing apparatus.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate.

Environmental precautions

Environmental precautions Due to the physical nature of this product, environmental release to drains and water courses is not possible.

Methods and material for containment and cleaning up

Methods for cleaning up Collect and place in suitable waste disposal containers and seal securely. For waste disposal, see Section 13.

Reference to other sections For personal protection, see Section 8. For waste disposal, see Section 13.

7. Handling and storage

Precautions for safe handling

Usage precautions Wash at the end of each work shift and before eating, smoking and using the toilet. Promptly remove any clothing that becomes contaminated. When using, do not eat, drink or smoke. Carbon fibers contained in some products are electrically conductive and if released during combustion may present a hazard to unprotected electrical apparatus.

Conditions for safe storage, including any incompatibilities

Storage precautions Keep container tightly closed and dry. See label on the container for the proper storage temperature.

Specific end uses(s)

Specific end use(s) As this product is an article, this section is not applicable.

8. Exposure controls/Personal protection

Control parameters

Occupational exposure limits

ACETONE

Long-term exposure limit (8-hour TWA): ACGIH 250 ppm 594 mg/m³

Short-term exposure limit (15-minute): ACGIH 500 ppm 1187 mg/m³

A4

Long-term exposure limit (8-hour TWA): OSHA 1000 ppm 2400 mg/m³

TITANIUM DIOXIDE

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Long-term exposure limit (8-hour TWA): ACGIH 10 mg/m³

A4

Long-term exposure limit (8-hour TWA): OSHA 15 mg/m³ total dust

ACGIH = American Conference of Governmental Industrial Hygienists.

A4 = Not Classifiable as a Human Carcinogen.

OSHA = Occupational Safety and Health Administration.

Exposure controls

Protective equipment



Appropriate engineering controls

Provide adequate general and local exhaust ventilation.

Eye/face protection

Wear approved safety spectacles, goggles or facemask.

Hand protection

Avoid skin contact by use of impermeable gloves when handling the product. To protect hands from chemicals, gloves should comply with OSHA 1910.138 and be demonstrated to be impervious to the chemical and resist degradation. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material.

Other skin and body protection

Ensure forearms are protected by use of gloves with long gauntlet, disposable sleeves or long sleeve overalls.

Hygiene measures

Wash hands after handling.

Respiratory protection

Local exhaust ventilation or an approved respirator should be used where fumes from hot material, or dust from machining cured material arise.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Flexible resin film containing continuous fibers of glass, carbon or aramid in unidirectional or woven fabric form. Product is protected by colored polyethylene or release paper.
Color	Black.
Odor	Mild (or faint).
Odor threshold	No information available.
pH	No information available.
Melting point	No information available.
Initial boiling point and range	No information available.
Flash point	No information available.
Evaporation rate	No information available.
Evaporation factor	No information available.
Flammability (solid, gas)	No information available.
Upper/lower flammability or explosive limits	Not relevant due to the physical form of this product.
Vapor pressure	No information available.
Vapor density	No information available.

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Relative density	No information available.
Bulk density	Not relevant due to the physical form of this product.
Solubility(ies)	No information available.
Partition coefficient	Technically not feasible.
Auto-ignition temperature	Not relevant due to the physical form of this product.
Decomposition Temperature	Heating above 300°C - thermal decomposition giving toxic and corrosive products: Carbon Monoxide, Ammonia, Amino derivatives, Carbon Oxides, Hydrogen Cyanide (hydrocyanic acid), (traces)
Viscosity	Not relevant due to the physical form of this product.
Explosive properties	Does not meet the criteria for classification as explosive.
Oxidizing properties	Does not meet the criteria for classification as oxidizing.
Comments	The indicated values do not necessarily correspond to the product specification. Please refer to the technical data sheet for specification data.
Other information	No information required.

10. Stability and reactivity

Reactivity	Refer to section 10.3 for further details.
Stability	Stable under proper handling and storage conditions.
Possibility of hazardous reactions	Will not occur under proper conditions of use. Rapid heating of the product in bulk may produce an uncontrolled exothermic reaction that may char and decompose the size, generating unidentified gases and vapors that may be toxic. Avoid inhalation.
Conditions to avoid	Avoid heat, flames and other sources of ignition. May form combustible dust concentrations in air
Materials to avoid	Strong oxidizing agents.
Hazardous decomposition products	Thermal decomposition and burning may release oxides of carbon, nitrogen and sulphur. The composition of gases/vapors/by-products generated during decomposition will vary depending on temperature conditions, temperature rate of rise and the presence of other chemicals in the vicinity that may react with the product. Gases/vapors/by-products should be regarded as toxic.

11. Toxicological information

Information on toxicological effects

Toxicological effects	This product has not been tested. Judgements on the expected toxicity of this product have been made based upon consideration of its major components.
<u>Acute toxicity - oral</u> Notes (oral LD₅₀)	Based on available data the classification criteria are not met.
<u>Acute toxicity - dermal</u> Notes (dermal LD₅₀)	Based on available data the classification criteria are not met.
<u>Acute toxicity - inhalation</u> Notes (inhalation LC₅₀)	Based on available data the classification criteria are not met.

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Skin corrosion/irritation

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/irritation

Serious eye damage/irritation Causes serious eye irritation.

Respiratory sensitization

Respiratory sensitization Based on available data the classification criteria are not met.

Skin sensitization

Skin sensitization May cause an allergic skin reaction.

Germ cell mutagenicity

Genotoxicity - in vitro Based on available data the classification criteria are not met.

Carcinogenicity

Carcinogenicity Based on available data the classification criteria are not met.

Reproductive toxicity

Reproductive toxicity - fertility Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure Based on available data the classification criteria are not met.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Based on available data the classification criteria are not met.

Aspiration hazard

Aspiration hazard Based on available data the classification criteria are not met.

12. Ecological information

Ecotoxicity

Daphnia Immobilization Study program covering the chemistry family of the saleable product has been conducted to determine the aquatic toxicity of prepregs. Based on the study results, the product is not required to be labelled for supply with the dead fish / dead tree symbol (GHS09) in accordance with GHS guidelines.

Persistence and degradability

Persistence and degradability There are no data on the degradability of this product.

Bioaccumulative potential

Bio-Accumulative Potential No data available on bioaccumulation.

Partition coefficient

Technically not feasible.

Mobility in soil

Mobility

Not relevant, due to the form of the product.

Other adverse effects

Other adverse effects None known.

13. Disposal considerations

Waste treatment methods

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General information	Materials for disposal should be placed in appropriate sealed containers to avoid potential human and environmental exposure. It is the responsibility of the generator to comply with all federal, state, provincial and local laws and regulations. We recommend that you contact an appropriate waste disposal contractor and environmental agency for relevant laws and regulations. Under the U.S., Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user of the product to determine at the time of disposal, whether the product meets relevant waste classification and to assure proper disposal.
Disposal methods	It is recommended to conduct a risk assessment prior to recycling or re-using paper coverings or any other packaging to ensure the downstream user's exposure to any potential hazard is identified and appropriately managed. For packaging and paper coverings, which may have come into direct contact with the product, the hazard classification and applicable regulatory restriction associated with the chemicals identified in section 3 of the Safety Data Sheet should be considered during the risk assessment to ensure no recycling or re-use in downstream application/markets where the use would not be approved.

14. Transport information

General	Daphnia Immobilization Study program covering the chemistry family of the saleable product has been conducted to determine the aquatic toxicity of prepregs. Based on the study results, the product is not required to be labelled for supply with the dead fish / dead tree symbol (GHS09) in accordance with GHS guidelines, and is not considered as Class 9 in accordance with Transport of Dangerous Goods Regulations.
<u>UN Number</u>	
UN No. (International)	This product is not dangerous to transport.
<u>UN proper shipping name</u>	
Proper shipping name (International)	This product is not dangerous to transport.
<u>Transport hazard class(es)</u>	
Transport Labels (International)	This product is not dangerous to transport.
<u>Packing group</u>	
Packing group (International)	This product is not dangerous to transport.
<u>Environmental hazards</u>	
Environmentally Hazardous Substance	No.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	This product is not dangerous to transport.

15. Regulatory information

US Federal Regulations

RCRA	RCRA Information: Currently, the product is not listed in the federal hazardous waste regulation 40 CFR, Part 261.33, paragraphs (E) or (F), ie. chemical products that are considered hazardous if they become waste. State or local hazardous waste regulations may also apply if they are different from the federal regulation. It is the responsibility of the user of the product to determine at the time of disposal, whether the product meets relevant waste classification and to assure proper disposal.
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US State Regulations

California Proposition 65 Carcinogens and Reproductive Toxins

This product contains the following chemical(s) listed by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) as being known to cause cancer, birth defects or other reproductive harm.

Inventories

US - TSCA

All components of this product are either listed or exempt from listing.

16. Other information

Abbreviations and acronyms used in the safety data sheet

ACGIH American Conference of Industrial Hygienists
 ATE Acute Toxicity Estimate
 CAS# Chemical Abstracts Service Number
 CERCLA Comprehensive Environmental Response, Compensation, and Liability Act
 DOT Department of Transportation
 EmS Emergency Response Procedures for Ships Carrying Dangerous Goods
 EPA Environmental Protection Agency
 GHS Global Harmonized System
 HMIS Hazardous Materials Identification System
 IATA International Air Transport Association
 ICAO International Civil Aviation Organization
 IMDG International Maritime Dangerous Goods
 Kow Octanol-water partition coefficient
 LC50 Lethal concentration to 50% of a test population
 LD50 Lethal dose to 50% of a test population
 n.o.s. Not otherwise specified
 OSHA Occupational Safety and Health Administration
 PNEC Predicted No Effect Concentration
 PPE Personal Protection Equipment
 ® Registered Trademark of Hexcel Corporation
 RCRA Resource Conservation and Recovery Act
 SADT Self-accelerating decomposition temperature
 SARA Superfund Admendments and Reauthorization Act
 STOT Specific Target Organ Toxicity
 (STOT) RE Repeated Exposure
 (STOT) SE Single Exposure
 TSCA Toxic Substance Control Act
 UN United Nations
 VOC Volatile Organic Compound
 WHMIS Workplace Hazardous Materials Information System

General information

Empty containers will retain some of the product residue. When handling or disposing of them, follow all label warnings, other instructions and waste disposal procedures.

Issued by

U.S.A. Product Stewardship department

Revision date

9/20/2018

Revision

1.0

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Hazard statements in full	H225 Highly flammable liquid and vapor. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H336 May cause drowsiness or dizziness. H411 Toxic to aquatic life with long lasting effects. USH01 May form combustible dust concentrations in air.
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Wherever such words or phrases as "hazardous," "toxic," "carcinogen," etc. appear herein, they are used as a defined or described under state employee right-to-know laws, Federal OSHA laws or the direct sources for these laws such as the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), etc. The use of such words or phrases should not be taken to mean that we deem or imply any substance or exposure to be toxic, hazardous or otherwise harmful. Any exposure can only be understood within the entire context of its occurrence, which includes such factors as the substance's characteristics as defined in the SDS, amount and duration of exposures, other chemicals present and preexisting individual differences in response to the exposure. The data provided in this SDS is based on the information received from our raw material suppliers and other sources believed to be reliable. We are supplying you this data solely in compliance with the Federal OSHA Hazard Communication Standard, 29 CFR 1910.1200 and the Federal and State laws as described in Section 15: Regulatory Information. The information contained in this SDS is proprietary and confidential to Hexcel Corporation. This SDS and the information in it are not to be used for purposes other than compliance with the Federal OSHA Hazard Communication Standard. If you have received this SDS from any other source than Hexcel Corporation or its authorized agent, the information contained in it may have been modified from the original document and it may not be the most current revision. Liability, if any, for use of this product is limited to the terms contained in our sale terms and conditions. We do not in any way warrant (expressed or implied, including any implied warranty for merchantability or fitness for a particular purpose) the data contained or the product described in this SDS. Additionally, we do not warrant that the product will not infringe any patent or other proprietary or property rights of others.