

Section 1: Identification

1.1 Product Identifier

Product Name: NB/NCT 321 Woven fabric or unitape

1.2 Recommended Use and Restrictions on Use

Material is used to fabricate composite articles by curing under heat and pressure.

1.3 Supplier Information:

Manufacturer: Mitsubishi Chemical Carbon Fiber and Composites, Inc.
1822 Reynolds Ave.
Irvine, CA 92614
United States
www.mccfc.com

Telephone (General): +1 (949)-253-5680 [8:00 am – 4:00 pm, M – F, PST]

1.4 Emergency Telephone Number

US and Canada: +1-800-255-3924
Outside US and Canada: +01-813-248-0585

Section 2: Hazard Identification

2.1 Classification of the Substance or Mixture

According GHS standard and US **OSHA 29 CFR 1910.1200 HCS**

Skin Irritation 2
Eye Irritation 2A
Skin Sensitization 1

2.2 Label Elements

Warning



Hazard statement

H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation

Precautionary statement

Prevention: P264 - Wash thoroughly after handling.
P261 – Avoid breathing dust / fume / gas / mist / vapor / spray.
P272 - Contaminated work clothing should not be allowed out of the workplace.
P280 - Wear protective gloves and eye/face protection.

Response: P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
P321 - Specific treatment, see supplemental first aid information.
P332+P313 – If skin irritation occurs: Get medical advice / attention.
P362 - Take off contaminated clothing and wash before reuse.

P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 - If eye irritation persists: Get medical advice/attention
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P363 - Wash contaminated clothing before reuse.

Storage disposal: P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations

2.3 Other Hazards

Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous

Section 3 - Composition/Information on Ingredients

3.1 Chemical Identity

Hot melt Epoxy Prepreg supplied on reinforcement fiber or matrix

3.2 CAS Numbers, Unique Identifiers

Chemical Name		CAS #	Wt.%	GHS Classifications
Reinforcement*	Glass – Fiber *	65997-17-3	50 - 80	Not Classified
	Carbon Fiber *	7440-44-0	50 - 80	Not Classified
	Aramid Fiber *	26125-61-1	50 - 80	Not Classified
Prepreg Resin Matrix Ingredients	Epoxy Resin Mixture	Proprietary	30 - 60	H315-Causes skin irritation; H317-May cause an allergic skin reaction; H319-Causes serious eye irritation; H411-Toxic to aquatic life with long lasting effects
	Hardener / Catalyst	Proprietary	1 - 10	H301-Toxic if swallowed; H315-Causes skin irritation ; H318-Causes serious eye damage ; H335-May cause respiratory irritation
	Tougheners	Proprietary	0.5 - 5	Not Classified

*Note: May contain one of the following reinforcement fibers

Section 4 - First Aid Measures

4.1 Description of First Aid Measures

Inhalation: Remove to fresh air. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing. Get medical attention if symptoms occur.

Skin: Wash the contaminated area of body with soap and fresh water. Remove all contaminated clothing. If irritation develops and persists, get medical attention.

Eye: In case of contact with substance, immediately flush eyes with running water for at least 20 minutes. If eye irritation persists: Get medical advice/attention.

Ingestion: If ingested, obtain medical attention immediately.

4.2 Most Important Symptoms and Effects, Acute and Delayed

Refer to Section 11- Toxicological Information

4.3 Indication of Any Immediate Medical Attention and Special Treatment Needed

Notes to Physician: All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Section 5 - Firefighting Measures

5.1 Extinguishing

Suitable Extinguishing Media: LARGE FIRE: Water spray, fog or regular foam.
SMALL FIRES: Dry chemical, CO2, water spray or regular foam.
Unsuitable Extinguishing Media: No data available.

5.2 Special Hazards Arising From the Substance or Mixture

Specific Hazards: When heated and in case of fire, irritating vapors/gases may be emitted.

Usual Fire and Explosion Hazards: Will burn when exposed to fire, may result in exotherm, which can generate acrid smoke and fumes.

Hazardous Combustion Products: Decomposition and combustion by products may be toxic.

5.3 Special Protective Equipment and Precautions for Firefighters

Wear positive pressure, self-contained breathing apparatus (SCBA) and structural firefighters' protective clothing.

Section 6 - Accidental Release Measures

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

For non-emergency personnel:

- a. Remove ignition sources and ensure adequate ventilation.
- b. See section 8 for personal protective equipment to prevent contamination on skin, eyes and clothing.

For Emergency Responders:

- a. See section 5.3 for suitable gear/equipment in emergency situations.

6.2 Environmental Precautions

Avoid release to the environment

6.3 Methods and Material for Containment and Clean Up

Pick up or sweep material and clean any contaminated surfaces. For waste disposal, see section 13.

Section 7 - Handling and Storage

7.1 Precautions for Safe Handling

Handling: Prior to use, thaw thoroughly before removing product from its bag, in order to prevent moisture related voids in cured composite parts. Material cures under heat, pressure, can exotherm if heated rapidly under uncontrolled conditions. Avoid open flame when heating. When heating to cure product, provide adequate ventilation to avoid breathing any vapor or fumes

Protective gloves are recommended to prevent skin contact. Do not get in eyes or on skin or clothing. Do not ingest.

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking, and smoking. Remove contaminated clothing and protective equipment before entering eating areas.

Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Do not reuse containers/packaging.

7.2 Conditions for Safe Storage, Including Any Incompatibilities

Storage: Keep container closed in a dry place. Store at 0°F (-18°C) to prolong shelf life. Storing at room temperature, or above, or exposure to sunlight/UV may appreciably shorten useful life of the product and/or affect product performance adversely.

7.3 Specific End Use(s)

Refer to Section 1.2 - Relevant identified uses

Section 8 - Exposure Controls/Personal Protection

8.1 Control Parameters

Exposure Limits/Guidelines (TWA)					
Material	CAS #	Wt. %	ACGIH	NIOSH	OSHA
Glass - Fiber * as Glass wool fiber	65997-17-3	50 – 80	1 fiber/cm ³ TWA, aspect ratio > 5:1	Not established	Not established
Hardener/ Catalyst	7631-86-9	Less than 0.1	Not established	Not established	0.8 mg/m ³

*Note: When Glass – Fiber are present

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene

NIOSH = National Institute of Occupational Safety and Health

OSHA = Occupational Safety and Health Administration

TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

8.2 Exposure Controls

Engineering Measures/Controls:

No special ventilation requirements. Good general ventilation should be used especially where heating or machining/grinding/sawing operations occur. 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.

Personal Protective Equipment:

Respiratory: In case of insufficient ventilation, wear suitable respiratory equipment. Use NIOSH approved respiratory protection (US requirements).

Eye / Face: Wear safety glasses.

Skin / Body: Wear appropriate gloves. Wear long sleeves and/or protective coveralls.

Environmental Exposure Controls:

Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways. Follow best practice for site management and disposal of waste.

Section 9 - Physical and Chemical Properties

9.1 Information on Physical and Chemical Properties

Material Description			
Physical Form	Solid	Appearance/Description	Solid opaque tacky film on woven or unidirectional fiber, interleaved with release paper and/or poly film.
Color	Opaque	Odor	Negligible
Odor Threshold	Not relevant		
General Properties			
Boiling Point	Not relevant	Melting Point	Not available
Decomposition Temperature	Not determined	pH	Not determined
Specific Gravity/Relative Density	1.2 to 1.8	Water Solubility	Negligible < 0.1 %
Viscosity	Solid @ room temperature	Explosive Properties	Not applicable.
Oxidizing Properties:	Not applicable.		
Volatility			
Vapor Pressure	Negligible	Vapor Density	Negligible
Evaporation Rate	Negligible		
Flammability			
Flash Point	Above 93° C (199.4° F)	UEL	Not relevant
LEL	Not relevant	Autoignition	Not relevant
Flammability (solid, gas)	Not applicable.		
Environmental			
Octanol/Water Partition coefficient		Not relevant	

9.2 Other Information

No additional physical and chemical parameters noted.

Section 10: Stability and Reactivity

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical Stability

Stable under normal temperatures and pressures.

10.3 Possibility of Hazardous Reactions

Rapid polymerization and exothermic reaction may occur at temperatures above 175°F (80°C) with emission of toxic fumes.

10.4 Conditions to Avoid

Temperatures above 175°F (80°C).

10.5 Incompatible Materials

Strong oxidizers, acids, and bases.

10.6 Hazardous Decomposition Products

Oxides of nitrogen, oxides of carbon, various organic compounds.

Section 11 - Toxicological Information

11.1 Information on Toxicological Effects

Components:				
Material	CAS #	Wt. %	Description:	
Reinforcement*	Glass - Fiber *	65997-17-3	50 - 80	Ingestion: None expected under normal conditions of use. Ingestion is not an expected route of industrial exposure. Skin Contact: Contact may cause mechanical irritation, skin redness, itching and drying of the skin. Eye Contact: May cause mechanical irritation. Inhalation: May cause respiratory system irritation
Prepreg Resin Matrix Ingredients	Epoxy Resin Mixture	Proprietary	30 - 60	Oral-Rat LD50 > 2000 mg/kg; Dermal-Rat LD 50 > 2000 mg/kg
	Hardener / Catalyst	Proprietary	1 - 10	Oral-Rat LD50: >10000 mg/kg Dermal Rat LD50: >2000 mg/kg

*Note: Not normally respirable in prepreg form. Subsequent machining, drilling, grinding of cured parts requires adequate engineering controls and PPE to prevent exposure to glass fibers and other nuisance dusts.

**Note: Only when glass fiber is present as a reinforcement fibers.

Key to abbreviations

LD = Lethal Dose

TC = Toxic Concentration

TD = Toxic Dose

GHS Properties	Classification
Acute toxicity	Not classified
Aspiration Hazard	Not classified
Carcinogenicity	Not classified
Germ Cell Mutagenicity	Not classified
Skin corrosion/Irritation	Skin Irritation 2
Skin sensitization	Skin Sensitizer 1
STOT-RE	Not classified
STOT-SE	Not classified
Toxicity for Reproduction	Not classified
Respiratory sensitization	Not classified
Serious eye damage/Irritation	Eye Irritation 2A

Potential Health Effects

Inhalation:	
Acute (Immediate):	No adverse effects are anticipated by breathing small amounts of vapor during use.
Chronic (Delayed):	No data available.
Skin:	
Acute (Immediate):	Causes skin irritation. May cause skin sensitization. Symptoms include redness, and skin rash.
Chronic (Delayed):	No data available
Eye:	
Acute (Immediate):	Causes serious eye irritation.
Chronic (Delayed):	No data available.
Ingestion:	
Acute (Immediate):	Not a relevant mode of exposure.
Chronic (Delayed):	No data available.
Carcinogen Effects:	Due to the form of the product, exposure to the potentially carcinogenic components is not expected.

Carcinogenic Effects			
Material	CAS#	Wt. %	IARC
Glass – Fiber* as Glass wool fiber	65997-17-3	50 – 80	Group 2B: Limited evidence of carcinogenicity in humans and less than sufficient evidence of carcinogenicity in experimental animals.
Hardener/ Catalyst	7631-86-9	Less than 0.1	Group 3: Not classifiable as to its carcinogenicity to humans

*Note: Not normally respirable in prepreg form. Subsequent machining, drilling, grinding of cured parts requires adequate engineering controls and PPE to prevent exposure to glass fibers and other nuisance dusts.

Only when Glass – Fiber are present as a reinforcement fiber in prepreg.

Key to abbreviations

IARC = International Agency for Research Cancer

Section 12 - Ecological Information

12.1 Toxicity

No Data Available

12.2 Persistence and Degradability

No Data Available

12.3 Bioaccumulative Potential

No Data Available

12.4 Mobility in Soil

No Data Available

12.5 Results of PBT and vPvB Assessment

No PBT and vPvB assessment has been conducted.

12.6 Other Adverse Effects

No studies have been found.

Section 13 - Disposal Considerations

13.1 Waste Treatment Methods

Product waste: Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Packaging waste: Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Section 14 - Transport Information

DOT	TDG	IMO / IMDG	IATA / ICAO
No regulated	No regulated	No regulated	No regulated

Special precautions for user

None specified.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

N/A

Section 15 - Regulatory Information

15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

None specified.

US – CERCLA / SARA Section 302 Extremely Hazardous Substances EPCRA RQs

Not Listed

US – CERCLA / SARA Section 304 Hazardous Substances and their Reportable Quantities

Components	CAS #	Concentration	CERCLA Reportable Qty.	Product Reportable Qty.
Epichlorohydrin	106-89-8	Less than 2 ppm	100 lbs.	25000 lbs.

SARA Hazard Classifications 311 - 312

Components	CAS #	Concentration %	Hazard.
Epoxy Resin Mixture	Proprietary	30 – 60	Acute
Hardener/ Catalyst	Proprietary	1 – 10	Acute

US – CERCLA / SARA Section 313 Emission Reporting

Not Listed

United States Inventory TSCA Information

All components are listed or exempt.

United States – California – Proposition 65

This product contains the following chemicals known to the state of California:

Component	CAS	Concentration	Cancer	Reproductive	NSRL µg/day *	MADL µg/day **
Epichlorohydrin	106-89-8	Less than 2 ppm	Yes	Yes	9	Not listed
Methanol	67-56-1	Trace	Not listed	Yes	Not listed	47,000 (inhalation) 23,000 (oral)
Acrylonitrile	107-13-1	Trace	Yes	Not listed	0.7	Not listed

*NSRL: No significant Risk Levels.

**MADL: Maximum Allowable Dose Levels.

Canada Inventory

All components are listed or exempt.

15.1 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out.

Section 16 - Other Information

This version replaces all previous versions. The information provided in this (M)SDS is provided in good faith and believed to be accurate as of the date of its publication, however no warranty, expressed or implied, is given. Regulatory requirements are subject to change and may differ between various locations. MCCFC urges each customer or recipient of this Safety Data Sheet to study it carefully to become aware of, and to understand the data contained in this Safety Data Sheet and be aware of any hazards associated with the product as to its use, storage, processing, transportation, processing, release or disposal. It is the buyer's/user's responsibility to ensure compliance with all federal, state and local laws. The information relates only to the material designated and may not be valid when the material is used in combination with any other materials, or in any process. This information does not constitute a hazard assessment and the user must conduct their own assessment of workplace risks as required by their pertinent health and safety regulatory requirements.

Revision Date: November 10, 2017.

Preparation Date: November 10, 2017.