MATERIAL SAFETY DATA SHEET

Mitsubishi Gas Chemical Company, Inc.

Made on 5. Sep. 2002

1. IDENTIFICATION OF THE CHEMICAL PRODUCT AND THE COMPANY

PRODUCT NAME CCL-HL832TF

MANUFACTURER Mitsubishi Gas Chemical Company, Inc.

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2. COMPOSITION / INFORMATION ON INGREDIMENTS

SUBSTANCE OR PREPARATION Preparation

GENERIC NAME Glass Fabric Reinforced Epoxy Modified Bismaleimide Triazine Resin Laminate (Cured resin)

INGREDIENT NAME	**CAS#**
Continuous Filament Fiber Glass	65997-17-3
Copper	7440-50-8
Bismaleimide/Triazine	13676-54-5 / 25722-66-1
Epoxy Resin	29690-82-2 / 68541-56-0 / 26265-08-7
Inorganic filler	13776-74-4 / 7631-86-9

Additional material names not listed above may also appear in the Regulatory Information Section at the end of the MSDS.

3. HAZARDS IDENTIFICATION

EMERGENCY INFORMATION SUMMARY

This is a nonflammable , black sheet material. Dust from machining operations may be a cause of skin or eye irritation.

Fumes, smoke, and gases from the thermal decomposition of the material may irritate eyes, nose, and throat.

POTENTIAL HEALTH HAZARDS

SKIN Dust may cause skin irritation

EYES Dust may cause moderate eye irritation. Fumes, gases, and smoke from thermal decomposition may irritate eyes.

INHALATION Resin and Fibrous glass dust may be released when the material is machined.

INGESTION Not considered a normal route of entry.

DELAYED EFFECTS IARC has categorized continuous filament FIBROUS GLASS (the type of fibrous glass used in textile applications such as manufacturing glass fabric for prepreg and laminate manufacture) as not classifiable with respect to human carcinogenicity (Group 3). This classification was based on the fact that the evidence from human , as well as animal, studies evaluated by IARC was insufficient to classify continuous filament fibrous glass. Fiber glass wool (primarily used for insulation in a variety of applications) was classified as a possible human carcinogen by IARC (Group 2B). This classification was primarily based on studies in which experimental animals were exposed to wool glass fibers through non-natural routes, such as injection or implantation.

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4. FIRST-AID MEASURES

EYE Flush with water for more than 15min. and consult with eye physician.

SKIN Wash dust off with water. If irritation occurs, consult medical attention.

INHALATION If overcome by dust, smoke, gases or fumes, remove to fresh air. If not breathing, give mouth to mouth resuscitation. Call physician.

INGESTION If large amounts are ingested, consult physician.

ADVICE TO PHYSICIAN Decomposition gases, smoke, and fumes causes by exposure of the material to high heat may include hydrogen cyanide, carbon monoxide and aromatic hydrocarbons.

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5. FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA Water, dry chemicals, and Carbondioxide

SPECIAL FIRE FIGHTING PRECAUTIONS/INSTRUCTIONS

Wear positive pressure self-contained breathing apparatus. Structural firefighters' protective clothing will only provide limited protection.

UNUSUAL FIRE AND EXPLOSION HAZARDS

This material will burn when exposed to an external source of combustion with releasing a dense black smoke containing Carbondioxide, CO, NO_x , HBr , hydrocarbon fragments, and HCN.

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6. ACCIDENTAL RELEASE MEASURES

IN CASE OF SPILL OR OTHER RELEASE

Material is considered an article. Spill or release to be environment is highly unlikely.

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7. HADLING AND STORAGE

HANDLING Protect absorption Fibrous glass dust may be released when the material is machined. Handle the materials with gloves to protect cut a skin.

STORAGE Avoid hot, humidity and water condition.

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8. EXPOSURE CONTROL / PERSONAL PROTECTION

ENGINEERING CONTROLS Use local exhaust to control dust.

PERSONAL PROTECTIVE EQUIPMENT

SKIN PROTECTION Gloves and coveralls should be worn when handling or machining materials. Clothing should be either discarded or cleaned after use. Do not wear dust contaminated clothing home.

EYE PROTECTION Use appropriate eye protection (safety glasses) when machining material. Goggles are recommended when high levels of dust are present, such as during equipment cleaning operations.

RESPIRATORY PROTECTION Atmospheric levels of fibrous glass, copper, and other dusts should be maintained low.

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9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Black sheets which may be clad with copper foil .
PHYSICAL STATE	Solid
ODOR	None under normal conditions
PH	Not relevant
EXPLOSION PROPERTIES	Not relevant
DENSITY	1.5 - 2.5 (Water = 1)
SOLUBILITY IN WAYER	Negligible

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10. PHYSICAL HAZARD (STABILITY AND REACTIVITY)

STABILITY Stable at normal condition

HAZARDOUS DECOMPOSITION PRODUCTS Over 300℃, this materials decompose and produce Carbondicxide CO, NO_x, HBr, Hydrocarbon fragments, and HCN

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11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY Not relevant

IMMEDIATE EFFECTS Dust may cause eyes, skin and respiratory irritation

DELAYED EFFECTS IARC has categorized continuous filament FIBROUS GLASS (the type of fibrous glass used In textile applications such as manufacturing glass fabric for prepreg and laminate manufacture) as not classifiable with respect to human carcinogenicity (Group 3). This classification was based on the fact that the evidence from human , as well as animal, studies evaluated by IARC was insufficient to classify continuous filament fibrous glass. Fiber glass wool (primarily used for insulation in a variety of applications) was classified as a possible human carcinogen by IARC (Group 2B). This classification was primarily based on studies in which experimental animals were exposed to wool glass fibers through non-natural routes, such as injection or implantation.

OTHER DATA The thermal degradation products may cause both acute and chronic effects.

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12. ECOLOGICAL INFORMATION

Not Biodegradable

13. DISPOSAL CONSIDERATIONS

Disposal must be made in accordance with all applicable Local regulations. Copper should be recycled.

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14. TRANSPORT INFORMATION

US DOT HAZARD CLASS Not Required

US DOT ID NUMBER Not Required

15. REGULATORY INFORMATION

TSCA INVENTORY STATUS The resin system components used to make this material are on the TSCA inventory list. The material itself is not required to be on the list.

OTHER TSCA ISSUES Not relevant

16. OTHER INFORMATION

Requests for additional information on specific ingredients should be directed to

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Electronics Materials Division

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This Material Safety Data Sheet is written following ISO 11014-1.

The product information contained herein is believed to be accurate as of the date of the Material Safety Data Sheet, and is provided without warranty, expressed or implied, as to the results of this information or the product to which it relates. Health and safety precautions in this data sheet may not be adequate for all individuals and/or situations. It is the User's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations.