1. IDENTIFICATION OF THE CHEMICAL PRODUCT AND THE COMPANY

PRODUCT NAME: CCL-HL832EX
MANUFACTURER: Mitsubishi Gas Chemical Company, Inc.
5-2, Marunouchi 2-chome, Chiyoda-ku, Tokyo, Japan, 100-8324
Telephone: +81 (Japan)-3-3283-4736
Facsimile: +81 (Japan)-3-3215-2558
Emergency Tel: +81 (Japan)-3-3283-4740

2. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>SUBSTANCE OR PREPARATION</th>
<th>Preparation</th>
</tr>
</thead>
<tbody>
<tr>
<td>GENERIC NAME</td>
<td>Glass Fabric Reinforced Epoxy Modified Bismaleimide Triazine Resin Laminate (Cured resin)</td>
</tr>
<tr>
<td>INGREDIENT NAME</td>
<td>CAS#</td>
</tr>
<tr>
<td>Continuous Filament Fiber Glass</td>
<td>65997-17-3</td>
</tr>
<tr>
<td>Copper</td>
<td>7440-50-8</td>
</tr>
<tr>
<td>Bismaleimide/Triazine</td>
<td>13676-54-5 / 25722-66-1</td>
</tr>
<tr>
<td>Epoxy Resin</td>
<td>29690-82-2 / 25068-38-6</td>
</tr>
<tr>
<td>Inorganic filler</td>
<td>13776-74-4 / 7631-86-9</td>
</tr>
</tbody>
</table>

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.

Mitsubishi Gas Chemical Company, Inc.
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.

4. FIRST-AID MEASURES
EYE	Flush with water for more than 15 min. 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.

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, NOx, HBr, hydrocarbon fragments, and HCN.

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.
7. HANDLING AND STORAGE

HANLDING
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.

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.

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 WATER
Negligible

10. PHYSICAL HAZARD (STABILITY AND REACTIVITY)

STABILITY
Stable at normal condition

HAZARDOUS DECOMPOSITION PRODUCTS
Over 300 °C, this materials decompose and produce
Carbonicxide CO₂, NOₓ,
HBr, Hydrocarbon fragments, and HCN

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY
Not relevant

IMMEDIATE EFFECTS
Dust may cause eyes, skin and respiratory irritation

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**DELAYED EFFECTS**

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**OTHER DATA**

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

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12. ECOLOGICAL INFORMATION

Not Biodegradable

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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

<table>
<thead>
<tr>
<th>US DOT HAZARD CLASS</th>
<th>Not Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>US DOT ID NUMBER</td>
<td>Not Required</td>
</tr>
</tbody>
</table>

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15. REGULATORY INFORMATION

<table>
<thead>
<tr>
<th>TSCA INVENTORY STATUS</th>
<th>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.</th>
</tr>
</thead>
<tbody>
<tr>
<td>OTHER TSCA ISSUES</td>
<td>Not relevant</td>
</tr>
</tbody>
</table>
16. OTHER INFORMATION

Requests for additional information on specific ingredients should be directed to

Planning Development Department
Electronics Materials Division

Mitsubishi Gas Chemical Company, Inc.
Mitsubishi Building
5-2 Marunouchi 2-chome, Chiyoda-ku, Tokyo 100-8324
Phone   +81-3-3283-4736
Fax      +81-3-3215-2558

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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.