

MATERIAL SAFETY DATA SHEET

MSDS No. : 11-0857

1. PRODUCT AND COMPANY IDENTIFICATION

●PRODUCT

PRODUCT NAME : I U P I T A L
 GRADE : F 3 0 - 0 3
 GRADE MEMBER : F 1 0 - 0 1, F 1 0 - 0 2, F 2 0 - 0 1, F 2 0 - 0 2, F 2 0 - 0 3
 F 3 0 - 0 1, F 3 0 - 0 2, F 4 0 - 0 3

●COMPANY IDENTIFICATION

SUPPLIER : MITSUBISHI ENGINEERING-PLASTICS CORP.
 ADDRESS : Shiodome Sumitomo-Bldg. 25F, 9-2, Higashi-shinbashi 1-Chome,
 Minato-ku, Tokyo 105-0021, Japan
 DEPARTMENT : Environment and Quality Assurance Department
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 DATE : 2011. 3. 29
 PREPARED BY :

2. HAZARDS IDENTIFICATION

According to GHS Classification

Classification : Not Classified

Possible Hazards: No Specific dangers known

Formaldehyde will be generated when heat or burnt the POM

3. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAME : Acetal copolymer, Polyoxymethylene copolymer, POM
 COMPOSITION : POM resin more than 99 %
 CHEMICAL FORMULA : $-\left[-(\text{CH}_2\text{O})_p-(\text{C}_2\text{H}_4\text{O})_q-\right]_n-$
 CAS REGISTRY No. : 24969-26-4
 OTHERS :
 Ingredients contributing to hazard: Formaldehyde (CAS No. 50-00-0)

4. FIRST-AID MEASURES

EYE CONTACT :

Flush the eyes with plenty of water without rubbing the eyes with hands.
 Get medical attention if irritation persists.

SKIN CONTACT :

Wash contaminated skin with soap and water after contact with processing vapors and fumes. Immediately cool contaminated skin with water and get medical attention after contact with molten resin.

INHALATION :

If fumes are inhaled, remove person to fresh air. If breathing is difficult, get medical attention.

INGESTION :

This product does not show significant acute toxicity.
 Get medical attention if considerable amounts of this product is ingested.

5. FIRE-FIGHTING MEASURES

SPECIAL FIREFIGHTING PROCEDURES :

This product is combustible thermoplastic materials which will melt and drip when ignited and gives off combustion product such as carbon dioxide, water, traces of carbon monoxide and formaldehyde.

Fire-men have to wear self-containing breathing apparatus.

EXTINGUISHING MEDIA :

Water spray, carbon dioxide, dry chemical or foam.

OTHERS :

| | |
|---------------------------------|-----------------------------|
| FLASH POINT: | > 6 0 0 ° F (> 3 1 6 ° C) |
| UPPER EXPLOSION LIMIT: | Unavailable |
| LOWER EXPLOSION LIMIT: | 35g/m ³ |
| AUTOIGNITION TEMPERATURE: | Unavailable |
| SENSITIVITY/SPARKS: | Unknown |
| SENSITIVITY/STATIC ELECTRICITY: | Unknown |

• FIRE AND EXPLOSION HAZARDS :

Finely divided acetal copolymer dusts, when dispersed in air may cause a dust explosion hazard. All material handling equipment which may generate dust clouds of the product should have properly designed explosion relief/suppression

systems

• FIRE-FIGHTING EQUIPMENT :

Wear full protective clothing and self-contained breathing apparatus with full face-piece. Combustion products may include toxic fumes.

6. ACCIDENTAL RELEASE MEASURES

This product is a non-hazardous solid in pellet form which can be easily controlled in case of spill or leakage. Collect and put those pellets in proper containers for disposal or recovery.

7. HANDLING AND STORAGE

HANDLING :

Avoid breathing processing fumes and vapors.

Processing fumes and vapors may cause eyes, skin and respiratory tract irritation, and in case of overexposure, nausea and headache.

Clean dusts from cutting and sanding operation to prevent its accumulation, since it may cause spark due to static electricity or dust explosion.

Properly ground air transportation lines including hoppers, bag filters to prevent accumulation of static electricity.

STORAGE :

Keep this product in closed or covered containers when not in use. Store in cool dry place with adequate ventilation. Keep it away from sunlight, elevated temperature, moisture or ignition sources.

Take measures to prevent an accident due to static electricity from occurring.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

AIRBORNE EXPOSURE LIMITS

This Product ;

OSHA PEL : none established

ACGIH TLV : none established

Decomposition product : Formaldehyde

OSHA TWA : 0.75ppm

STEL : 2ppm

ACGIH TWA : 0.3ppm

ENGINEERING MEASURES :

Provide sufficient ventilation to control exposure levels below airborne exposure limits (see above) . If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.

PERSONAL PROTECTIONS :

RESPIRATORY PROTECTION ;

Avoid breathing dusts, vapors or fumes. Use NIOSH/OSHA approved respiratory protection equipment (full face-piece recommended) when airborne exposure limits (see above) are exceeded. Consult respirator manufacturer to determine appropriate type equipment for given application. Observe respirator use limitations specified by NIOSH/OSHA or the manufacturer.

EYE PROTECTION ;

This product does not cause significant eye irritation or eye toxicity requiring special protection, except when in molten state. Use good industrial practice to avoid eye contact. Processing of this product releases vapors or fumes which may cause eye irritation. Where there is significant potential for eye contact, wear appropriate eye protection and have eye flushing equipment available.

SKIN PROTECTION ;

This product does not present a significant skin concern requiring special protection at room temperature. Minimize skin contamination by following good industrial hygiene practice. Processing of this product releases vapors or fumes which may cause skin irritation. Wash hands and contaminated skin thoroughly after contact with processing vapors or fumes. Wear glove when handling molten resin.

DUST CLEANING ;

Processing fume condensate may cause a fire hazard and toxic. Keep clean periodically exhaust hoods, duct work and other surfaces using appropriate protection equipment.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---------------------|---|
| APPEARANCE | : Solid pellets (natural, black & various colors) |
| BOILING POINT | : Not applicable |
| FLASH POINT | : > 316°C |
| VAPOR PRESSURE | : Not applicable |
| MELTING POINT | : 160–170°C |
| SPECIFIC GRAVITY | : 1.4 |
| OXIDIZIBILITY | : None under normal handling conditions |
| FLAMMABILITY | : Combustible |
| EXPLOSION LIMIT | : 35g/m ³ |
| SOLUBILITY IN WATER | : Negligible |
| ODOR | : None or slightly formaldehyde odor |

10. STABILITY & REACTIVITY

THERMAL DECOMPOSITION : Decomposition begins at 240°C <.

REACTIVITY WITH WATER : None

SELF-REACTIVITY : None

CONDITIONS TO AVOID :

In order to avoid hazardous decomposition of hot thick masses of plastics, purged plastics should be cut in small, flat, thin forms to allow rapid cooling. Do not allow molten resin to remain in barrel at elevated temperatures for extended period of time.

HAZARDOUS DECOMPOSITION PRODUCTS :

Smoldering or incomplete combustion leads to the formation of toxic gas mixture such as carbon dioxide, carbon monoxide, trioxane, formaldehyde and paraformaldehyde.

HAZARDOUS REACTIONS :

No hazardous reaction observed.

11. TOXICOLOGICAL INFORMATION

SKIN CORROSIVITY :

None
 IRRITATION :
 None
 ACUTE TOXICITY :
 Not known
 SUB-ACUTE TOXICITY :
 Not known
 CHRONIC TOXICITY :
 Not known
 CARCINOGENIC EFFECTS :
 IARC group 3
 (not classifiable as to its carcinogenicity to humans)
 MUTAGENIC EFFECTS :
 Not known
 OTHERS :
 Carcinogenicity class of formaldehyde in IARC is 'Group 1'

12. ECOLOGICAL INFORMATION

BIODEGRADABILITY : No data available.
 BIOACCUMULATION : No data available.
 FISH TOXICITY : Not known

13. DISPOSAL CONSIDERATIONS

Dispose of waste by incineration, sanitary landfill or other method in accordance with all applicable local, state and federal laws and regulations.
 Consult your attorney or appropriate regulatory officials for information on such disposal.

14. TRANSPORT INFORMATION

UN No. :
 DECLARATION FOR LAND SHIPMENT :
 DECLARATION FOR SEE SHIPMENT :
 DECLARATION FOR SHIPMENT BY AIR :
 OTHERS INFORMATION :
 Not dangerous cargo. Keep dry.

15. REGULATORY INFORMATION

- LABELLING ACCORDING TO EEC DIRECTIVE : Not required

In connection with dusts formed in consequence of mechanical treatment, e.g. grinding, the appropriate regulation/limit values for fine dusts must be observed :
 MAX value (fine dust) : 6 mg/m³

16. OTHER INFORMATION

The data given here is based on current knowledge and experience.
 The purpose of this Safety Data Sheet is to describe the products in terms of their safety requirements.
 The data does not signify any warranty with regard to the product's properties.