Date of issue: Jan 28, 2016
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SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product name (chemical name, trade name): Methacrylic resin sheet SHINKOLITE™
SHINKOLITE™ FR3

Manufacturer:	Mitsubishi Chemical Corporation
Address:	1-1, Marunouchi 1-chome, Chiyoda-ku, Tokyo 100-8251, Japan
Department in charge:	MMA & Derivatives Business Group, MMA/PMMA Division Technology Dept., PMMA Technology Gr.
Telephone:	+81-(0)3-6748-7526
Fax:	+81-(0)3-6685-0785
Emergency contact number:	Same as the department in charge
Reference number:	ALE-031-3(revision 7)

Recommended use of product and restriction on use:

Please do not adopt this product to a medical product coming in contact with internal body tissue.
Please do not adopt this product for products that may touch the baby's mouth or baby may swallow.
If you will adopt our product as a food-related or drinking water use, please contact to the importer of this product beforehand.

2. HAZARDS IDENTIFICATION

GHS classification: No classification
(This product is a “molded product (article)” and is not applied a classification of chemicals based on "Globally Harmonized System of Classification and Labeling of Chemicals”.)
Physical and chemical hazard: This product is a flammable solid and will burn if an ignition source is present. Dust from this product has dust explosiveness. This product may generate static electricity when the plate is rubbed or the protective sheet is peeled off.
Health hazard: The pyrolysis gas may irritate the eyes or the respiratory system or cause symptoms such as dizziness, nausea, and headache. Wear protective equipment, as contact with a heated plate may cause burn injury. Wear protective equipment to prevent hands from being cut by the corner or edge of the plate. Use a safety cover or wear protective equipment to prevent broken or chipped pieces of the plate from entering the eyes or being inhaled.

3. INFORMATION ON COMPOSITION AND INGREDIENTS

Single product or mixture: Mixture (Molded product)

General name: Acrylic resin sheet

Component	Content (wt%)	CAS RN®
Alkyl acrylate/alkyl methacrylate copolymer	80 or more	N/A
Residual methacrylate monomers (including methyl methacrylate)	Less than 1	80-62-6 (for MMA); Confidential for other residual monomers
Halogen containing phosphate	Less than 15	Not disclose
Tris(1-chloro-2-propyl) phosphate	Less than 2	13674-84-5
1,2-Dichloropropane	Less than 0.02	78-87-5
Acetaldehyde	Less than 0.005	75-07-0
Other components	Less than 3	－

As other components, this product contains performance-enhancing additives, coloring agent, and surface hard-coat layer depending on the type and color.

4. EMERGENCY MEASURES

Inhalation: If the pyrolysis gas, which is generated when this product is heated to an extremely high temperature, is inhaled and the victim feels unwell, immediately remove the victim to fresh air and get medical attention.

Skin contact: If heated resins adhere to the skin, immediately wash the part with clean water and get medical attention. Do not remove clothing if it sticks to the skin.

Eye contact: In case of contact of fine broken, chipped pieces or grinding swarf of the plate with the eyes, do not rub or close the eyes, as doing so may damage the eyes. Wash the eyes with clean water for at least 15 minutes and get medical attention. Remove contact lenses if present and easy to do and keep washing the eyes.

Ingestion: Vomit as much as possible, wash the mouth well, and get medical attention. Give artificial respiration or oxygen if necessary. If vomiting occurs and the victim is breathing, turn the face sideways. If unconscious, do not give anything by mouth.

5. FIRE-FIGHTING MEASURES

Appropriate extinguisher: Water, foam extinguisher, powder extinguisher and carbon dioxide extinguisher

Specific hazard: The burned gas contains pyrolysis gases such as carbon monoxide / methyl methacrylate / phosphate compound / chlorine compound. Take care not to inhale the smoke during fire fighting.

Fire extinguishing method: Remove heat sources from the fire area. This product may produce toxic gas when burned. Extinguish the fire from the windward side or wear an air respirator. Restrict access to the area around the fire. Spray water over equipment around the fire to cool it. In case of surrounding fire, immediately remove the product, if possible to do so, to a safe place. Take appropriate measures to prevent spills of environmentally hazardous substances when water is sprayed to extinguish the fire. Evacuate unnecessary personnel to a safe place.

Protection for persons extinguishing fire: Extinguish the fire from the windward side and avoid inhaling toxic gases. Wear appropriate protective equipment (such as gloves, glasses, a mask, and an air respirator).

6. MEASURES IN CASE OF LEAKAGE

Personal precautions, protective equipment and emergency measures: During fire fighting, wear protective equipment (gloves, glasses, and masks) to avoid dust or gas inhalation. Equip extinguishers in case of ignition.
Environmental precautions: If the product is spilled on a road or floor, immediately collect the spill. Immediately collect the spilled product to prevent release into the environment such as rivers.
Methods for containment and cleanup and methods for removal of equipment: In case of the small spills or dust, vacuum or sweep and collect them using a vacuum cleaner or broom. Use safe tools that do not generate sparks. Sweep and collect the dust in an empty sealable container. Collect the dust using methods that minimize the spread of the dust, such as vacuuming.
Prevention of secondary damage: This product is a flammable solid. Keep away from open flame.

7. WARNING IN HANDLING AND STORAGE

Handling
Technical measures: Handle in an area equipped with local or general ventilation. Provide equipment for washing eyes and body in case of emergency near the handling area. To prevent static electricity, make sure all equipment and devices are properly grounded. Dust from this product has dust explosiveness. If dust is generated when the product is machined, take necessary measures against static electricity. Use an explosion-proof dust collector (with a safe structure). Wear protective equipment, such as protective glasses, protective gloves, and safety shoes. Avoid use near open flame. Do not expose to excessive heat, friction, or shock. Seal the container each time the product is handled.
Heating may generate decomposition gases such as methyl methacrylate and chlorine-containing gases derived from flame retardants.
When processing with heating, please use the product after providing appropriate exhaust ventilation and preparing the work environment.
Do not perform laser processing.
Safety precautions: Take care that the skin or eye is not cut by the corner or edge of the plate. When machined, use a safety cover, protective equipment, and ventilation equipment to prevent broken, chipped pieces or grinding swarf of the plate or vapor from entering the eyes or inhalation of vapor. Static electricity may be generated when the plate is rubbed, one plate is taken out from stacked plates, or protective film is peeled off. Take care to prevent accidents caused by static electricity. When handling a heated plate, take care not to get burned. Do not upset, drop, impact, or drag the product. Handle with care.
Storage
Storage conditions: Store at a location away from heat and ignition source and an area not exposed to sunlight. Store in an area where no water leakage occurs and the humidity is low and take necessary measures to prevent the product from getting wet. Store so that the product does not fall, drop, or collapse.
Container and packaging materials: Use paper or plastic film to protect the product surface. To prevent the product from getting wet, seal the product with a packaging material such as polyethylene sheets or craft paper.

8. MEASURES FOR EXPOSURE PREVENTION AND PROTECTION

Facilities: Appropriate local exhauster is necessary when dust is generated by machining and other procedures.

Heating may generate decomposition gases such as methyl methacrylate and chlorine-containing gases derived from flame retardants.

When processing with heating, please use the product after providing appropriate exhaust ventilation and preparing the work environment.

Do not perform laser processing.

Control concentration: Not established.

Allowable concentration: Methyl methacrylate

ACGIHA(2015) TLV-TWA 50ppm

TLV-STEL 100ppm

Although ACGIH (American Conference of Governmental Industrial Hygienists) do not stipulate allowable concentration for dust, the values below are considered adequate to be applied.

	Average value of time load	
	Inhalable dust	Total dust
ACGIH Recommended Levels (2016) General dust (Nuisance Dust)	3mg/m^3	10mg/m^3

Protective equipment

Respiratory protection: Wear dust respirator to avoid inhaling of dust.

Hand protection: Wear protective gloves. When carrying a large plate, wear non-slip protective gloves. When handling a hot plate, wear heat-resistant gloves to prevent burn injury.

Eye protection: Wear protective equipment such as protective gloves, goggles, and a protective mask (safety masks) to prevent dust from entering the eyes.

Skin and body protection: Wear a cap, safety shoes, and long-sleeved clothing as needed.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:

Physical state: Solid

Color and Form: Transparent or colored planar sheet

Odor: None

pH: Not applicable

Melting point: Clear melting point does not exist. Gradually becomes malleable at a variable temperature of approx. 80ºC or more.

Flash point: Not applicable

Ignition point: 400ºC or more

Flammability: Flammable and burns when exposed to an ignition source.

Explosion limits: Not applicable

Specific gravity: FR3: 1.20

Solubility: Non-soluble in water

10. STABILITY AND REACTIVITY
Stability and reactivity: Stable in normal temperature and normal pressure.
Hazardous reactivity: None in particular
Conditions to be avoided: Storage in an area where the humidity and temperature are high, fire
Materials to be avoided: None in particular
Hazardous substances that may be produced: If the product is heated to 200°C or more, methyl methacrylate monomer / phosphate compound / chlorine compound are generated, which may irritate the eyes and respiratory system and result in dizziness, nausea, headache, and other symptoms.

11. TOXICOLOGICAL INFORMATION
Biologically inactive and normally has no effect to living organisms.
Acute toxicity: No data available.
Local impact (skin, eyes, etc.): The pyrolysis gas irritates the skin and eyes.
Sensitizer: No data available.
Mutagenicity: No data available.

12. ECOLOGICAL IMPACT INFORMATION
Ecological toxicity: No data available.
Biodegradability: No data available.
Bioaccumulative Potential: No data available.
Mobility in soil: No data available.
Hazardous to the ozone layer: No data available.

13. DISPOSAL CONSIDERATION
Incinerate or bury according to the laws and ordinances of the district.
Use incineration system in accordance with the laws when incinerating.
Combustion energy value of polymethylmethacrylate: 2.62×10^4 kJ/kg

14. TRANSPORT INFORMATION
International regulations:
UN number: Not applicable
Product name (UN transport name): Not applicable
UN classification: Not applicable
Container grade: Not applicable
Marine pollutant: Not applicable

15. REGULATORY INFORMATION
Note: The latest regulatory information should be confirmed with the importer.

16. OTHER INFORMATION

This product is in a solid state (molded product, article) and is not a product required to issue SDS. However, this SDS is created to provide information necessary for safe handling of the product. Although this SDS is created based on the latest materials, information and data available, the information given above is subject to revision when new discovery necessitates it.

The safety information contained in this SDS assumes that the product is handled under normal conditions. Before use, assess risks for the intended application and usage under full responsibility of the user and provide appropriate safety measures.

If you need more information about the safety of this product, contact, Technology Dept., PMMA Technology Gr., Mitsubishi Chemical Corporation.

The information contained in this SDS is disclosed for information purposes only and no warranty is expressed or implied.

Reference: GHS ANNEX Ⅱ, GHS SDS Instruction

Full description of some acronyms:

GHS: Globally Harmonized System of Classification and Labelling of Chemicals
CAS RN®: Chemical Abstracts Service
TWA: Time Weighted Average
STEL: Short Term Exposure Limit