

Light Guide Panel Material Safety Data Sheet

PRODUCT AND COMPANY IDENTIFICATION

Product name (chemical name, trade name): Methacrylic resin sheet SHINKOLITE™ (SHINKOLITE™ E and E-IR are excluded.)

Manufacturer: Mitsubishi Rayon CO., Ltd.

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Department in charge: MMA Technology Administration Office

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Emergency contact number: Same as the department in charge

Reference number: ALE-001

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.

INFORMATION ON COMPOSITION AND INGREDIENTS

Single product or mixture: Single product (Molded product)

General name: Methacrylic resin sheet

COMPONENT		CONTENT	JAPAN OFFICIAL GAZETTE REFERENCE No.	CAS No.
Methacrylic resin	Poly methyl methacrylate	88% or more	(6)-524	9011-14-7
	Methyl methacrylate – n-butyl acrylate copolymer		(6)-553	25852-37-3
Other components		10% or less	-	-
Residual methyl methacrylate monomer		2% or less	(2)-1036	80-62-6

The methacrylic resin is either of two kinds of above. As other components, this product contains performance-enhancing additives, coloring agent, and surface hard-coat layer depending on the type and color. Japan industrial Safety and Health Act: dangerous or harmful substances subject to be notified their names.



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(Article 57-2, Enforcement order 18-2 Appended Table 9) Methyl methacrylate (Cabinet order No.: 557)
(Less than 2%) In the colored product, a chemical substance included in the coloring agent may correspond to dangerous or harmful substances subject to be notified their names in Japan Industrial Safety and Health Act.

EMERGENCY MEASURES

In case of intake by air:

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.

In case of contact on skin:

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.

In case of entry in eye:

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 eyes.

In case of swallowing:

Vomit as much as possible, wash 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.

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 and methyl methacrylate. 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).



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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 spilled product to prevent release into the environment such as rivers.

Methods for containment, cleanup, and 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.

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 an open flame. Do not expose to excessive heat, friction, or shock. Seal the container each time the product is handled.

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 inhalation of vapor and broken, chipped pieces, or grinding swarf of the plate or vapor from entering the eyes. 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 conditions:

Store at a location away from heat and ignition sources 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 of craft paper.



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MEASURES FOR EXPOSURE PREVENTION AND PROTECTION

Facilities:

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

Control concentration:

Not established.

Allowable concentration:

Although both Japan Society for Occupational Health and 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
Japan Society for Occupational Health Recommended Levels (2005) Third-class dust	2 mg/m ³	8 mg/m ³
ACGIH Recommended Levels (2005) General dust (Nuisance Dust)	3 mg/m ³	10 mg/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 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.

PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state: Solid

Color and form: Transparent or colored planar sheet.

Odor: None

pH: Not applicable



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Melting point: Clear melting point does not exist. Gradually becomes malleable at a variable temperature of approx. 100°C or more.

Flash point: Not applicable

Ignition point: 400°C or more

Flammability: Flammable and burns when exposed to an ignition source

Explosive limits: Not applicable

Specific gravity: 1.19

Solubility: Non-soluble in water

SAFETY AND REACTIVITY

Safety 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 250°C or more, methyl methacrylate monomer is generated, which may irritate the eyes and respiratory system and result in dizziness, nausea, headache, and other symptoms.

HAZARD 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



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ENVIRONMENTAL IMPACT INFORMATION

Ecological toxicity: No data available

Biodegradability: No data available

Biological concentration: No data available

Transferability in the environment: No data available

Hazard to the ozone layer: No data available

WARNING IN CASE OF DISPOSAL

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

WARNING IN TRANSPORT

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

Japan regulations:

Fire department regulations: Designated flammable material, Synthetic resin (3,000 kg or more)

Safety considerations: Before transport, check the package for damage. Take necessary measures to prevent water leakage and handle with care. Stack the product so that it does not fall, drop, or get damaged, and take necessary measures to prevent collapse.



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REGULATORY INFORMATION

Japan:

Fire department regulations: Designated flammable material, Synthetic resin (3,000 kg or more)

Waste Disposal and Public Cleaning Law: Industrial waste, waste plastics

Chemical Substances Control Law: Class II Monitoring Chemical Substances (Methyl methacrylate)

Industrial Safety and Health Act: Dangerous or Harmful Substances Subject to be Notified Their Names. (Article 57-2, Enforcement Order 18-2 Appended Table 9) (Methyl methacrylate) The colored products may include chemical substances to be notified their names more than a cut-off level, titanium oxide, carbon black, chrome-based compound, cobalt compound, nickel compound, di-n-butyl phthalate, bis (2-ethylhexyl) phthalate. Please refer to the following for the noxious information of these chemical substances.

Homepage of the National Institute of Technology and Evaluation: http://www.safe.nite.go.jp/ghs/ghs_index.html

PRTR: Not applicable

Poisonous and Deleterious Substances Control Law: Not applicable

Ship Safety Act: Not applicable

Law Relating to the Prevention of Marine Pollution and Maritime Disasters: Not applicable

Other regulations for foreign countries: Regulatory information with regard to this article in your country or region should be examined by your own responsibility.

OTHER INFORMATION

This product is in a solid state (molded product, article) and is not a product required to issue MSDS. However, this MSDS is created to provide information necessary for safe handling of the product. Although this MSDS 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 MSDS 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 MMA Technology Administration Office, Mitsubishi Rayon Co., Ltd.

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

