

MATERIAL SAFETY DATA SHEET (MSDS)

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Chemical Product Name: Methyl methacrylate – Methyl acrylate Copolymer
Product Name: ACRYPET VH,MD,MF,VHM,VHS,VH4,VH5,VH6,VH12,S,SV
(for all color)
Company Name: Mitsubishi Rayon Co.,Ltd.
Company Address: 1-1,Marunouchi 1 - chome, Chiyoda-ku, Tokyo, Japan
Department: MMA Technology Administration Office
Telephone Number: +81-(0)3-6487-7526

2. HAZARDS IDENTIFICATION

GHS Classification: Not applicable or classify unable
Important danger hazardous property information: No information

3. INFORMATION ON CHEMICAL COMPOSITION, INGREDIENTS

Single product/Mixture: Mixture product
General name: Methacrylic resin (PMMA) molding material

Ingredients	Concentration or Concentration range	CAS Number
Methyl methacrylate - Methyl acrylate Copolymer (MMA-MA Copolymer)	90wt% <	9011-87-4
Methyl methacrylate	< 0.5wt%	80-62-6
Titanium oxide (IV) ¹⁾	0 - 7wt%	13463-67-7
Carbon black ²⁾	0 - 3wt%	1333-86-4

- 1) for white color materials
2) for black color materials

4. FIRST AID MEASURES

In case of skin contact:

In case of skin contact with high temperature melting resin, cool well immediately with fresh water and seek medical attention. In case that gas congelation from high temperature melting resin adheres to skin, wash thoroughly with soap water.

In case of Inhalation:

In case of inhaling a large quantity of gas from high temperature melting resin, remove the patient for fresh air immediately and rest him/her. If symptoms such as coughing, breathing difficulty or another symptom occur, seek medical attention.

In case of Ingestion:

In case of ingesting, drink sufficient quantity of water and vomit by inserting finger into the back of throat.

In case get into Eyes:

In case fine powder or dust of the resin get into eyes, do not rub and wash away immediately with fresh water. When contacts are in place, take them out immediately and wash.

5. FIRE FIGHTING MEASURES

Extinguishing media:

Water, spray and foam.

Water is the best extinguishing method. Dry chemical and /or carbon dioxide are not generally recommended because their lack of cooling capacity may permit re-ignition.

Protection of fire-fighting person:

Wear appropriate self-contained-compressed air breathing apparatus.

In case of fire, the resin will emit combustion gas with acrid smoke and irritating fumes. The fire-fighting person should wear respiratory protective device to avoid exposure to products of combustion.

6. ACCIDENTAL RELEASE MEASURES

Precautions, protective equipment and emergency measures for health:

Slippery ground or floor may cause stumbling.

Immediately remove sources of ignition and ventilate area.

In order to avoid breathing dust, water should be sprinkled. Then spilled material should be transferred to suitable containers.

Waste disposal

Landfill or incineration in accordance with waste disposal laws, local rules and regulations.

Precautions for environment:

Do not release into environment.

7. HANDLING AND STORAGE

Handling:

Technological measures

- The resin generates static electricity when handling. Bonding or grounding wire should be applied to conveying pipe or storage tank to prevent dust explosions.
- Installing local ventilation facility and general ventilation facility in workplace is desirable to control polymerdust and reduce exposure to organic vapors and the odors.
Avoid accumulation of dust in air exhaust duct for long time for preventing dust explosion and/or fire.
- Wearing dust-proof glasses, dust-proof mask and gloves are desirable when handling and processing.

Safe handling precaution:

- No food, beverages or smoking when using this product.
- Wash hands thoroughly after handling.
- Avoid swallowing.
- Avoid skin contact.

Storage:

Avoid rain water, direct sunlight, fire and heat source. The storage temperature should not exceed 60°C.
In case of indoor storage, the storage area should be limited to areas equipped with automatic sprinklers.
No incompatible substance.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Facility measures:

During molding process or machining process, installing local ventilation equipment to collect and evacuate generated gas, fine particles and dust is desirable. Equipped with facilities for face-wash, eye-wash and hand-wash in case of exposure is even better.

Concentration allowance:

Applying the following recommendation is reasonable although not set up particularly.

	Japan Society for Occupational Health	ACGIH
Total Particulate	8mg/m ³ (Time-Weighted Average Third-class particulate, organic)(2010)	General particulate 10mg/m ³ (1992)

Protective Equipment:

Respiratory protection

Wear dust-proof protective equipment such as dust-proof mask or organic gas.

Hand protection

Not required for normal uses. Wear well-insulated gloves in case of handling high temperature melting resin.

Eye protection

Wear protective glasses.

Skin and Body protection

General working clothes for general work is acceptable.

Hygiene measure

- No food, beverages or smoking when using this product.
- Wash hands thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Solid in pellet form
Color:	White and others (varies by color number)
Odor:	Almost none
pH:	No data
Melting point:	No explicit melting point observed, gradually soften in the temperature range from 90°C
Boiling point:	No information
Flash point:	No data
Autoignition point:	465°C (ASTM D1929-77) (Estimate)
Flammable or explosive limits:	No data
Lower limit:	No data
Octanol-Water partition coefficient:	No information
Viscosity:	No data
Density:	1.1 –1.2g/cm ³
Solubility:	Insoluble in water
Solubility in organic solvent:	Swellable and partially soluble in organic solvent such as chloroform
Vapor pressure:	None

Decomposition temperature: No data
Vapor density: No data

10. STABILITY AND REACTIVITY

Stability: Considered stable under the normal storage condition.
Conditions to avoid: No data
Hazardous polymerization: None
Hazardous decomposition: At elevated temperature (above 280°C) decomposition may occur resulting in the release of acrid smoke and irritating fumes.

11. TOXICOLOGICAL INFORMATION

Acute toxicity: No information
Biologically inactive, no effects anticipated.

12. ECOLOGICAL INFORMATION

Hazardousness for environment: No information
Ecotoxicity: No information

13. DISPOSAL CONSIDERATIONS

Disposal information: General incineration or landfill in accordance with waste disposal laws, local rules and regulations.
Containers and packaging disposal: Generally incinerate paper bags, polyethylene inner pouches and flexible container bags (polypropylene). In accordance with waste disposal laws, local rules and regulations.

14. TRANSPORT INFORMATION

International Regulations

Marine regulatory information: Not applicable
Air regulatory information: Not applicable

National Regulations

Land regulatory information: Not applicable
Marine regulatory information: Not applicable
Air regulatory information: Not applicable
Other: Handle with proper attention to avoid damaging packages.
In case that package tear and leakage of the resin occur, refer to
“**6 ACCIDENTAL RELEASE MEASURES**”

15. REGULATORY INFORMATION

Not applicable

16. OTHER INFORMATION

Contact: Refer to Section 1
Reference: “Acceptable Concentration Recommendation (1993)”
/Page 323-, Vol.35, National Institute of Industrial Health
“Dust Explosion – Risk Assessment and Prevention Measure”
/Association of Powder Process Industry & Engineering, Japan
August 1991, Ohmusha
“Resin Pellet Spill Prevention Manual”
/Japan Plastics Industry Federation, August 1993

The information presented herein is believed to factual; however, nothing contained in this information is to be taken as a warranty or representation for which the supplier or Mitsubishi Rayon Co., Ltd. bear legal responsibility. The user should review any recommendations in the specific context of the intended use to determine whether they are appropriate.