

MATERIAL SAFETY DATA SHEET

1. PRODUCT IDENTIFICATION

Material: Acrylic powder
Chemical Name
or Synonyms: Poly(methyl methacrylate-co-butyl methacrylate)

2. PRODUCT COMPONENTS (成份表)

| <u>COMPONENTS</u> | <u>CAS REG. NO.</u> | <u>1. Poly(methyl methacrylate-co-</u> | <u>WEIGHT (%)</u> |
|------------------------------|---------------------|--|-------------------|
| butyl methacrylate) | 9011-14-7 | | 95.0 (Min.) |
| 2. Methyl methacrylate (MMA) | 80-62-6 | | 2.0 (Max.) |
| 3. Butyl methacrylate (nBMA) | 97-88-1 | | 2.0 (Max.) |

3. PHYSICAL PROPERTIES

Appearance: White Beads
Odor: N/A
Viscosity: N/A
Melting Point: NA
Boiling Point: N/A
Vapor Pressure: N/A
Vapor Density: N/A (Air = 1)
Specific Gravity: 1.13-1.19 (Water = 1)
PH: N/A
Solubility in Water: Negligible
Volatility: Negligible (Weight %)
Evaporation Rate: Negligible (Butyl Acetate = 1)

4. FIRE AND EXPLOSION HAZARD INFORMATION

Flash Point: N/A
Auto Ignition Temperature: 445 C/833 F
Upper Explosion Limit (%): N/A
Lower Explosion Limit (%): N/A
Extinguishing Media: Carbon dioxide, dry chemical, or water.
Fire Protection Equipment: Wear self-contained, positive pressure breathing apparatus (MSHA/NIOSH approved, or equivalent) and full protective gear.
Unusual Fire and Explosion Hazard: Product is combustible thermoplastic material that burns vigorously with intense heat.

5. WORKPLACE EXPOSURE LIMITS

| COMPONENTS | OSHA | | ACGIH | |
|--|----------|------|---------|------|
| | PEL | STEL | TLV | STEL |
| 1. P(MMA-co-MA) | None | None | None | None |
| 2. MMA ppm None | 100 ppm | None | 100 | |
| 3. nBMA | 100 | None | 100 ppm | None |
| 4. Nuisance dusts (as particulates) | ppm 5 | None | 10 | None |
| | mg/m3 | | mg/m3 | |

6. HAZARD INFORMATION

Hazard Scale: 0 = Insignificant, 1 = Slight, 2 = Moderate, 3 = High, 4 = Extreme

Health Designation: 1

Fire Designation: 1

Reactivity Designation: 0

Inhalation: Inhalation of vapors from heated product can cause nausea,

headache, dizziness as well as irritation of lungs, nose, and throat.

Eye Contact: Vapors from heated product can irritate the eyes.

Ingestion: Low hazard associated with normal conditions.

Skin Contact: Possible skin irritation. Contact with molten material can result in burns.

Carcinogenicity: N/A

7. EMERGENCY AND FIRST AID PROCEDURES

Inhalation: Move subject to fresh air.

Eye Contact: Flush eyes with plenty of water for at least 15 minutes. Call a physician.

Ingestion: This material is not expected to be absorbed within the gastrointestinal tract, so induction of vomiting should not be necessary.

Skin Contact: If molten material contacts skin, cool rapidly with cold water and obtain medical attention for thermal burn.

8. REACTIVITY INFORMATION

Stability: Stable

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Conditions to Avoid: Temperatures over 300 C/570 F.
Hazardous Decomposition Products: Thermal decomposition or combustion may emit vapors, carbon monoxide, or carbon dioxide.
Incompatible Compounds: Acids, bases, and strong oxidizing agents.

9. SPILL OR LEAK INFORMATION

Sweep or scoop up and remove.

10. WASTE DISPOSAL

Landfill or incinerate at a facility that complies with local, state and federal regulations.

11. EXPOSURE CONTROLS/PERSONAL PROTECTION MEASURES

Respiratory Protection: May be required to use mask under normal conditions. Canvas or cotton gloves.
Hand Protection: or cotton gloves.
Skin Protection: Lab coat
Eye Protection: Safety glasses with side shields
Other Protection: N/A
Ventilation: Local exhaust ventilation systems should be constructed and installed.



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12. STORAGE AND HANDLING INFORMATION

Maximum Storage Temperature: 70 C/158 F (softening temperature).
Storage Measures: If material is stored under ambient temperature conditions, it is not hazardous. However, extensive storing at higher than the maximum temperature will emit vapors, carbon monoxide or carbon dioxide.
Handling Measures: Processing of the material under high temperatures will cause hazardous emissions of vapors, carbon monoxide or carbon dioxide. Blower collecting and local exhaust ventilation systems should be installed to prevent contaminant dispersion into the air. Sawing of this product generates particulates regulated as "inert" or "nuisance" dusts. To minimize dust emissions, engineering controls should be employed, such as baghouse filters and cyclone separators. A proper mask may be required.

13. REGULATORY INFORMATION

Environment

Comprehensive Environmental Response, Under section 102(a) of the Act, this product is NOT designated as hazardous. In addition, no

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Compensation, and Liability Act (CERCLA):

reportable quantities and no notification requirements to the National Response Center in Washington, DC are set forth for its release from a vessel, an offshore or an onshore facility (40 CFR Part 302).

Resource Conservation and Recovery Act (RCRA):

When this product becomes a waste, it is identified as solid but NOT hazardous waste under RCRA criteria (40 CFR Part 261).

Toxic Substances Control Act (TSCA):

The components of this product are on the TSCA inventory list. Any impurities present in this product are exempt from listing.

Superfund Amendment and Reauthorization Act of 1986 (SARA) Title III:

This product may be considered an immediate (acute) health hazard due to potential MMA emissions. However, reporting of thresholds for the material is not required because the concentration of its MMA component is below the de minimis concentration (40 CFR Part 370).

14. TOXICOLOGICAL INFORMATION

Inhalation

Irritating to respiratory system.

High atmospheric concentrations may lead to irritation of the respiratory tract, dizziness, headache and anaesthetic effects.

Skin Contact

May cause sensitisation by skin contact.

Irritating to skin. Repeated and/or prolonged contact may cause dermatitis.

Eye Contact

High vapour concentration will cause irritation.

Ingestion

Low oral toxicity, but ingestion may cause irritation of the gastrointestinal tract.

Long Term Exposure

Repeated exposure to high levels produces adverse effects on the heart, lungs, liver and kidneys.

Repeated exposure of animals by inhalation to levels at or above the occupational exposure level produces adverse effects on the nasal epithelium (levels of 100 and 400ppm). There is no reason to believe that methyl methacrylate represents a carcinogenic or mutagenic hazard to man based upon evidence from well conducted animal studies, relevant mutagenicity studies and adequate epidemiology studies in relevant cohorts. Recent studies in animals have shown that high exposures do not produce embryo or foetotoxic nor teratogenic effects in the presence of maternal toxicity.

None of these effects are likely to occur in humans, provided exposure is maintained at or below the occupational exposure limit.

15. Transportation

DOT Hazard Class: Not regulated.

DOT Shipping Name: N/A

16. Labor Awareness

This product as supplied is non-hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200). However, under processing conditions it may become a health hazard to employees because vapors and/or particulates could be released. See Section 12 for Storage and Handling Information.