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1. VisiJet® MP200 Overview

- Material Color: Amber
- Support Material: S100
- Material Type: Urethane Acrylate Material

**S100 Support Structure:** Wax Material

The labels on the part and support material cartridges identify the date that the material will expire. The shelf life for part and support material are two (2) years.
2. Disclaimer

Nothing contained herein is intended to be and should not be relied upon as legal or medical advice. Users of VisiJet® materials should review the Safety Data Sheets (MSDS/SDS) for these materials, and independently determine their compliance with applicable laws. The information contained in this guide is necessarily general in nature and suggestions should be implemented only after review for applicability to specific situations. Users are responsible for implementing health and safety procedures that comply with governing laws.
3. **Isopropyl Alcohol (IPA) and Acetone Handling Guidelines**

**Isopropyl Alcohol (IPA)** (Consult the Safety Data Sheet for further information)

**Personal Protective Equipment**
Safety Goggles, Chemical Resistant Gloves, Protective Clothing

**Handling and Storage**
Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product. Small quantities of peroxides can form on prolonged storage. Exposure to light and/or air significantly increases the rate of peroxide formation. If evaporated to a residue, the mixture of peroxides and isopropanol may explode when exposed to heat or shock.

**Disposal Considerations**
Empty containers can have residues, gases and mists are subject to proper waste disposal. Dispose of all wastes in accordance with federal, state METHODS and local regulations.
3. **Isopropyl Alcohol (IPA) and Acetone Handling Guidelines (Cont’d)**

**Acetone** (Consult the Safety Data Sheet for further information)

**Personal Protective Equipment**
Safety Goggles, Lab Coat, Vapor respirator; (use an approved/certified respirator or equivalent), Gloves

**Handling and Storage**
Keep locked up. Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/vapor/spray. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, reducing agents, acids, alkalis. Store in a segregated and approved area (flammables area). Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Keep away from direct sunlight and heat and avoid all possible sources of ignition (spark or flame).

**Disposal Considerations**
Waste must be disposed of in accordance with federal, state and local environmental control regulations.
4. **Material Handling**

**Burning finished parts**
Burning finished (cured) parts can produce carbon monoxide, oxides of nitrogen, and other potentially harmful gases/fumes. Concentrations of these products depend on burn-out temperature and conditions. Higher temperatures will assist in complete combustion of the material. Consult the Safety Data Sheet for further information.

**Exposure Control**
The ProJet 3-D modelers have a variety of built-in engineering controls designed to prevent operator exposure. Users should not try to change or disable these controls.

**General Health and Safety Information**
VisiJet® MP200 material is classified as combustible according to 29CFR 1910.1200. VisiJet materials is a sensitizer and an irritant. Please refer to the Safety Data Sheet for more information.

**Handling finished parts**
Finished (cured) VisiJet® parts can be handled or disposed of in the same manner as standard household plastic products. VisiJet® parts are not recyclable. VisiJet® MP200 plastic material is not intended for and cannot be used for medical implants or food and drink applications.

The VisiJet® S100 material does not cure. No special measures are necessary in normal use of this product. Refer to the MSDS Sheet for detail information. This product is not a hazardous waste as specified in 40CFR 261. Dispose in accordance with all Federal, State, Provincial and Local regulations.

VisiJet® MP200 Disposal Instructions: Avoid disposal. If possible, completely utilize product. Dispose of unused product in accordance with applicable Federal, State, Provincial and Local regulations.
4. **Material Handling (Cont’d)**

**Ingestion**
Uncured materials are potentially harmful if ingested. Therefore, uncured materials must not be present where food and drink are stored, prepared or consumed and should not be ingested.
As a precaution, after handling the materials, users should wash their hands with soap and water before consuming or preparing food.

**Cartridge Inspection**
Do not load expired cartridges / bottles in the modeler. If a cartridge / bottle is a year or more beyond its expiration date, the modeler will reject it. Inspect each cartridge for leakage or physical damage before you remove it from the polybag (if applicable) and load it in the modeler.

**Packaging Inspection**
The cardboard material shipping carton containing cartridges for VisiJet® MP200 material are wrapped in separate, sealed polybags. On receipt of the material shipments, inspect cartons for signs of physical damage and leakage. If leakage is observed, do not open carton; contact your authorized ProJet™ 3-D modeler reseller or 3D Systems' Customer Support Hotline. Assuming no leakage is observed, store materials in their cartons until they are ready for use.
When opening the carton, inspect each cartridge for any signs of leaking or physical damage. Do not open any polybag containing a leaking material cartridge. Do not load any leaking or damaged cartridges into the modeler. If you find a leaking cartridge, call your authorized ProJet™ 3-D modeler reseller or the 3D Systems Hotline, and arrange for return of the leaking cartridge and replacement with a new cartridge or bottle. If you do not return the cartridge or bottle, dispose of it in accordance with local and other regulatory disposal requirements.

**Personal Protection**
- **Eye protection**
  - In the event of a leak or spill of uncured material, wear safety glasses with side shields to provide eye protection.
- **Respiratory protection**
  - Because of the ProJet 3-D modelers built-in engineering controls, respiratory protection is not necessary during normal operation. A NIOSH-approved dust mask is recommended when sanding cured VisiJet material parts.
- **Skin Protection**
  - Exposure to uncured material can occur under certain circumstances, such as when removing and disposing of the bin liner or waste bag. To prevent contact, wear chemically resistant protective gloves. Nitrile or neoprene gloves are recommended. Do NOT use latex gloves.
4. **Material Handling (Cont’d)**

**Sensitization**  
Uncured material is a sensitizer and can cause allergic reactions. Nitrile or neoprene gloves are recommended when skin contact is possible. Do NOT use latex gloves. To avoid skin sensitization, do not allow uncured material to contact skin. In almost all cases, direct skin contact is necessary to cause skin sensitization. VisiJet materials is not known to cause sensitization by inhalation. Consult the MSDS for specific information about sensitization potential.

**Storage**  
The shelf life of VisiJet® part and support materials are two years from date of manufacture. Use the oldest inventory first. VisiJet® material should be kept indoors in a cool, dry area with adequate ventilation at temperatures between 16 °C (60 °F) and 27 °C (80 °F). DO NOT EXCEED A MAXIMUM STORAGE TEMPERATURE OF 35 °C (95 °F). Keep away from direct sunlight, heat, flames and other direct light or UV energy sources. For optimal results, keep stored cartons closed and sealed. If the material is sealed in a polybag, do not open the bag until the material is ready for use.

**Training**  
Employees should be trained in the hazards and management of VisiJet materials. Such training should be provided to new employees before they begin working with the modeler, or disposing of material waste.
5. **HDP Mode For Model and Die Post Processing**

**Required Supplies and Equipment**
- 2" Paint Scraper
- Acetone
- ProJet Finisher
- Isopropyl Alcohol
- Hot Plate (optional)
- Corn Oil
- Heated Ultrasonic
- Three Plastic Container for Parts
- TransTint® Dye Solution

**Removing Parts From Platform**
- a) Preheat ProJet Finisher oven to 70 Deg. C
- b) Using 2" paint scraper gently scrape parts off platform. **NOTE: Use this method carefully to avoid damaging the platform**

**Alternate Method for Removing Parts**
- a. Remove parts from platform by using hot plate. When platform is heated parts will slide off.
5. **HDP Mode For Model and Die Post Processing (Cont’d)**

**Removing Bulk Wax**

a. Preheat ProJet Finisher Oven to 70 Deg. C.
b. Place parts in 70 degree C. finisher oven just long enough to soften support wax (5 to 10 minutes depending on size).
c. Scrape softened wax off model using 2” paint scraper. Let rest for 2 minutes on bench.
5. **HDP Mode For Model and Die Post Processing (Cont’d)**

**Heated Ultrasonic Cleaning to Remove Residual Wax**

Corn oil acts as a mild solvent that will penetrate internal areas where residual wax may pool and remove it while keeping the wax slightly above the melting point.

a. Set ultrasonic at 70 degrees C. and pre-heat corn oil for 20 minutes by allowing vibration to heat oil.
b. Place parts in heated oil 2 to 5 minutes depending on size to remove the rest of the support wax. If needed, swish or stir models for faster cleaning. (A fish net can be used to swish through the oil for faster results.)
5. **HDP Mode For Model and Die Post Processing (Cont’d)**

**Finishing Parts**

a. After parts are removed from the ultrasonic, let parts cool on bench for 2-3 minutes or longer if needed. This will prevent thermal shock that looks like white or light spots in the model usually on cusp tips.

b. Place parts in a plastic container filled with acetone to remove the oil residue from parts.

c. Remove parts and place them in another container filled with clean acetone for 15 to 30 minutes to create reaction layer (frosted parts).
5. **HDP Mode For Model and Die Post Processing (Cont’d)**

### Finishing Parts (Cont’d)

d.) In a clean container, mix acetone or IPA with the dye solution. Dip the part in colored solution until desired color is obtained.
e.) Place on bench to air dry.

**NOTE:** TransTint dye from Homestead Finishing Products ([http://www.homesteadfinishingproducts.com/htdocs/TransTint.htm](http://www.homesteadfinishingproducts.com/htdocs/TransTint.htm)) works well to provide a color to the model. There are 19 colors available but these three colors correspond to the most popular stone colors. Two drops per 100ml provides a good starting point.

- “Dark Vintage Maple” = Tan
- Green = Green
- Blue = Blue
5. **HDP Mode For Model and Die Post Processing (Cont’d)**

**Finishing Parts (Cont’d)**

Frosting Parts: The amount of frosting will be dependent on how clean the part is. Oil and wax inhibit the reaction thus reducing the effect. To get the best result be sure your part is free of oil and wax.

**Important Note. When submitting build, orient Jobs on platform long wise in Y direction for best results**
6. **HDX Mode For Clear Parts and Surgical Post Processing**

**Required Supplies and Equipment**
- 2” Paint Scraper
- ProJet Finisher
- Hot Plate
- Heated Ultrasonic
- Mild Soap
- Corn Oil
- Three Plastic Containers for Parts
- Glutaraldehyde solution (available from dental suppliers)

**Removing Parts From Platform**

a) Preheat ProJet Finisher oven to 70 Deg. C
b) Using 2” paint scraper gently scrape parts off platform. **NOTE: Use this method carefully to avoid damaging the platform**

**Alternate Method for Removing Parts**

a. Remove parts from platform by using hot plate. When platform is heated parts will slide off.
6. **HDX Mode For Clear Parts and Surgical Post Processing (Cont’d)**

Alternate Method for Removing Parts

a. Preheat ProJet Finisher Oven to 70 Deg. C
b. Place parts in 70 degree C finisher oven just long enough to soften support wax (5 to 10 minutes depending on size).
   c. Scrape softened wax off model using 2” paint scraper. Let rest for 2 minutes on bench.
6. **HDX Mode For Clear Parts and Surgical Post Processing (Cont’d)**

**Heated Ultrasonic Cleaning to Remove Residual Wax**
Corn oil acts as a mild solvent that will penetrate internal areas where residual wax may pool and remove it while keeping the wax slightly above the melting point.

a. Set ultrasonic at 70 degrees C. and pre-heat corn oil for 20 minutes by allowing vibration to heat oil.

b. Place parts in heated oil 2 to 5 minutes depending on size to remove the rest of the support wax. If needed, swish or stir models for faster cleaning. (A fish net can be used to swish through the oil for faster results.)
6. **HDX Mode For Clear Parts and Surgical Post Processing (Cont’d)**

**Finishing Parts**

a. After parts are removed from the ultrasonic, let parts cool on bench for 2-3 minutes or longer if needed. This will prevent thermal shock that looks like white or light spots in the model usually on cusp tips.

b. Wash parts in light mixture of mild soap and warm water to remove oil residue.

c. Place on bench to air dry.

To cold sterilize surgical guides, please use a recommended Glutaraldehyde solution available from dental suppliers. DO NOT AUTOCLAVE.

**Important Note.** When submitting build, orient Jobs on platform long wise in Y direction for best results.
7. **Disposal for VisiJet® Part Material**

**User Management**

Users of the 3-D modelers should be informed about the potential hazards of VisiJet® part material prior to working with the 3-D modelers, or performing other duties which can result in exposure to uncured material, such as removal and disposal of bin liners and empty cartridges or waste bags.

**Material Leaks and Spills**

Leakage of material is HIGHLY UNLIKELY, and should NOT occur in the normal operation of the modeler. If a leak does occur, it is an indication of a serious printer malfunction. Spills of material are also unlikely, but could occur.

- In the event of a spill or a leak, the first priority is to protect users from inadvertently touching the material.
- In the event of a spill or leak support material, it may be cleaned up without the use of protective gear and disposed of as ordinary office trash.
- In the event of a spill or leak of VisiJet® part material, the use of gloves and other protective equipment is required, to ensure that no direct contact with uncured plastic material is possible. If you are uncertain which material has spilled, assume it is uncured material, and handle accordingly with the recommended protective gloves and other safety gear.
- In the event of a spill or leak, keep unnecessary personnel away. Refer appropriate personnel to the Safety Data Sheet for proper cleanup procedure.
- In the event of a leak within the modeler, discontinue use of the modeler, and contact 3D Systems or your authorized 3-D modeler reseller to arrange for a service visit to determine and repair the source of leakage.