

VisiJet® SR 200 and HR 200 Plastic Materials Handling Guide

**How to properly use, handle and dispose of
VisiJet SR 200 and HR 200 plastic material
and associated support material for the
InVision™ SR and HR 3-D printers***



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* Formerly the InVision™ si² 3-D printer

Table of Contents

Disclaimer	3
Check the Printer and Material Types	3
Material Handling	3
Packaging inspection	3
Storage	3
Cartridge loading	3
Part building	4
General Health and Safety Information	4
Sensitization	4
Ingestion	4
Handling finished parts	5
Burning finished parts	5
Exposure control	5
Personal protective equipment	5
Skin protection	5
Eye protection	5
Respiratory protection	5
Training	5
Part Post-Processing	6
Disposal	6
User management	6
Material Leaks and Spills	6
Waste removal	6
Regulatory information	7
Disposal procedures	7

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.

Check the Printer and Material Types

It is important to match the material type with your printer type. Verify that you are loading VisiJet SR 200 material into an InVision™ SR 3-D printer, and VisiJet HR 200 material into an InVision HR 3-D printer.

Material Handling

Packaging inspection

The cardboard VisiJet material shipping carton contains cartridges of VisiJet material wrapped in separate, sealed polybags. On receipt of the material shipments, inspect the carton for signs of physical damage and leakage. If leakage is observed, do not open the carton. Contact your authorized InVision 3-D printer reseller or [3D Systems' Customer Support Hotline](#). Assuming no leakage is observed, store materials in their cartons until the ready for use.

When you open 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 your InVision printer. If you find a leaking cartridge, call your authorized InVision 3-D printer reseller or local [3D Systems Hotline](#), and arrange for return of the leaking cartridge, and replacement with a new cartridge. If you do not return the cartridge, dispose of it in accordance with local and other regulatory disposal requirements.

Storage

The shelf life of VisiJet SR 200 and HR 200 plastic materials is one year from date of manufacture. For VisiJet support material, shelf life is two years. Each cartridge is marked with its expiration date. 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. Do not open polybags until the cartridge is ready for loading into the printer.

Cartridge loading

Do not load expired cartridges in the printer. If a cartridge is a year or more beyond its expiration date, the printer will reject it.

VisiJet support material (the white cartridge) must be loaded in the left feed slot, and VisiJet plastic material (the black cartridge) must be loaded in the right feed slot.

Inspect each cartridge for leakage or physical damage before you remove it from the polybag and load it in the printer. Do not open a polybag containing a leaking material cartridge. Do not load a leaking or damaged cartridge. If you find a leaking or damaged cartridge, call your authorized InVision 3-D printer reseller or local [3D Systems Hotline](#), and arrange for return of the cartridge, and replacement with a new cartridge. If you do not return the cartridge, dispose of it in accordance with local and other regulatory disposal requirements.



The seal on the nozzle end of the cartridge should not be punctured or exhibit signs of leakage.



The seal between the plunger and the cartridge should not exhibit signs of leakage.

Part building

If you find uncured material on the part or platform at the end of a build, this is an abnormal (and very unlikely) condition which indicates that your printer requires servicing by a certified InVision 3-D printer service technician. Assume that any liquid or paste-like material is plastic material. Do not touch uncured plastic material without protective gloves. Discontinue use of the printer, pending service by a certified InVision 3-D printer service technician.

General Health and Safety Information

VisiJet materials are classified as combustible according to 29CFR 1910.1200. VisiJet plastic material is a sensitizer and an irritant. Please refer to the Safety Data Sheet for more information.

Sensitization

Uncured VisiJet plastic 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 plastic material is not known to cause sensitization by inhalation. Consult the Safety Data Sheet for specific information about sensitization potential.

Ingestion

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

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 plastic materials are not intended for—and cannot be used for—medical implants or food and drink applications.

Burning finished parts

Burning finished (cured) parts, as required for investment casting applications, can produce carbon monoxide, oxides of nitrogen, and other potentially harmful gases/fumes. Concentrations of these byproducts 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 InVision SR and HR 3-D printers have a variety of built-in engineering controls designed to prevent operator exposure. Users should not try to change or disable these controls.

Personal protective equipment

Skin protection

Exposure to uncured VisiJet plastic 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.

Eye protection

In the event of a leak or spill of uncured VisiJet plastic material, wear safety glasses with side shields to provide eye protection.

Respiratory protection

Because of the InVision printer's 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.

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 printer, or disposing of material waste.

Part Post-Processing

Post-process parts built in SR 200 and HR 200 according to the instructions for post-processing VisiJet M100 parts.

Disposal

User management

Users of InVision 3-D printers should be informed about the potential hazards of VisiJet plastic material prior to working with an InVision printer, or performing other duties which can result in exposure to uncured VisiJet plastic 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 printer. 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 of VisiJet **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 **plastic 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 plastic 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 InVision printer, discontinue use of the printer, and [contact 3D Systems](#) or your authorized 3-D Printer reseller to arrange for a service visit to determine and repair the source of leakage.

Waste removal

Three “waste” items must be removed from the InVision 3-D printers: a white cardboard liner holding empty support material cartridges, a black cardboard bin liner which holds empty plastic material cartridges, and a waste bag containing a combination of support and uncured plastic material. **Wear protective gloves when removing any waste product from the printer.** Be careful to not spill, drop, or expose others to these materials, especially the plastic material cartridges and the waste bag. Dispose of all waste material in accordance with applicable regulations.



Bottom drawer, showing white VisiJet support material cartridges in the left side bin liner, and black VisiJet plastic material cartridges in the right side bin liner.

In the middle is the waste bag, which collects residual support and uncured plastic materials.



Support material bin liner being removed from the bottom drawer.



Plastic material bin liner being removed from the bottom drawer.



Removal of the bag from the drawer



Replacing waste bag into bottom drawer.



Sealing the bag prior to disposal.

Regulatory information

VisiJet support material has no known regulatory requirements.

Comply with all applicable local, state, and federal environmental and safety regulations when disposing of partially cured, or uncured VisiJet plastic materials.

Disposal procedures

VisiJet support material and cartridges may be disposed of in ordinary office trash.

Parts produced from the InVision printer are fully cured VisiJet plastic material, and do not require any special disposal considerations.

Cartridges, waste bags, uncured VisiJet plastic material, and cleanup materials are classified in different ways, depending on locale. These materials may require special packaging, transportation, and disposal. Be aware of, and always comply with, the regulations in effect in your location.

To determine your waste disposal requirements, you will need to provide a local waste disposal provider with the MSDS for the plastic material. They then typically provide you a report detailing the disposal requirements that apply to your facility.

Two examples of waste disposal service providers are:

- **Teris-Wilmington** —1737 East Denni Street, Wilmington, CA 90744 USA—Telephone: (310) 835-9998 —Web: <http://www.terisna.com/>
- **Safety-Kleen Systems, Inc.** — Cluster II, Building 3, 5400 Legacy Drive, Plano, Texas 75024 — Tel: (800) 669-5740; (972) 265-2000; E-mail: info@safety-kleen.com — Web: <http://www.safety-kleen.com/>

3D Systems neither guarantees nor endorses these companies' services, expertise, quality, or capabilities. 3D Systems assumes no liability or responsibility for proper disposal of the uncured plastic material. Proper disposal of the uncured plastic material is the sole responsibility of the user.