

MATERIAL SAFETY DATA SHEET

Complies with Approved Code of Practice: Chemical (Hazard Information and Packaging for Supply) Regulations 2002 (UK) and European 91/155/EEC, 67/548/EEC, 1999/45/EC format, Australian NOHSC: 1008, 10005(1999), 2011(2003), 1003(1995) and ANSI Standard Z400.1 and U.S. Federal OSHA Hazard Communication

Section 1. Identification of Chemical Substance and Company

- 1.1. **PRODUCTS IDENTIFICATION:** zp[®]150 powder
- 1.2. **USE OF SUBSTANCE:** Plaster powder for making rapid-prototyping 3D models.
- 1.3. **COMPANY:** Z Corporation
32 Second Ave.
Burlington, MA 01803
Contact Person: Manager of Technical Services
Telephone Number: 781-852-5050
Foreign Contact: +(45) 48 14 11 22
Svanevang 2, 3450 Allerød, Denmark
Date of Preparation: 5/09
- 1.4. **FOR CHEMICAL EMERGENCY: Spill Leak Fire Exposure or Accident**
Call CHEMTREC Day or Night
DOMESTIC NORTH AMERICAN: 800-424-9300
INTERNATIONAL, CALL 703-527-3887 (collect calls accepted)

Section 2. Hazards Identification

Potential Human Health Effects:

May cause irritation of the eyes, mucous membranes, and respiratory tract. May be harmful by inhalation or ingestion. Eye contact may cause mechanical abrasion with burning, tearing and redness. Ingestion may cause inflammation of the mouth, throat, esophagus and/or stomach.

Target Organs or Systems:

Caution: May cause irritation to the eyes, skin, mucous membranes, upper respiratory tract. Ingestion of large amounts may be harmful.

Route of Exposure:

Skin Contact: When mixed with water, this material hardens. **DO NOT** attempt to make a cast enclosing any part of the body using this material.

Eye Contact: May cause eye irritation.

Inhalation: May be harmful if inhaled. Material may be irritating to the mucous membranes and upper respiratory tract.

Ingestion: May cause gastric disturbances, including inflammation of the mouth, throat, esophagus and/or stomach. Ingestion of a sufficient quantity could lead to mechanical obstruction of the gut, especially the pyloric region.

Acute:

May cause irritation of the eyes, skin, mucous membranes, and respiratory tract. May be harmful by inhalation, ingestion, or skin absorption.

Chronic:

Inhalation: Prolonged or repeated overexposure may cause signs/symptoms which include coughing, sneezing, nasal irritation, nasal discharge, hoarseness, chest pain, chronic rhinitis, laryngitis, pharyngitis, and breathing difficulty. Pre-existing upper respiratory and lung disease may be aggravated by exposure.

Skin: Repeated contact may dry the skin, causing cracking and dermatitis (rash).

Carcinogens Under OSHA, ACGIH, NTP, IARC, OTHER:

All ingredients in this product contain no carcinogens in concentrations of 0.1 percent or greater based on U.S. and European chemical data base information.

Potential Environmental Effects:

No significant environmental hazards are expected if material is released to the environment.

GHS Classification for Mixture: None

Section 3. Composition/Information of Ingredients

Substance is a mixture with following general composition:

Ingredients	Approximate % by weight	C.A.S. No. & EINECS No.
1. Plaster	<90%	Trade Secret
2. Vinyl Polymer	<20%	Trade Secret
3. Carbohydrate	<10%	Trade Secret

Section 4. First Aid Measures

Inhalation:

Remove from area to fresh air. Seek medical attention if respiratory irritation develops or if breathing becomes difficult.

Eye Contact:

Immediately flush eyes with copious amounts of water for at least 15 minutes. Call physician if irritation continues.

Skin Contact:

Immediately wash skin with soap and rinse with large amounts of water. Remove and wash contaminated clothing promptly. If symptoms persist, seek medical attention.

Ingestion:

Wash out mouth with water provided the person is conscious and seek medical attention. Plaster hardens when wetted and, if ingested, may result in obstruction.

Section 5. Fire-Fighting Measures

Flammable Properties

Product is not combustible.

Extinguishing Media:

Use ABC type fire extinguishers.

Special Fire Fighting Procedures

A self-contained breathing apparatus and full protective clothing should be worn in fire conditions.

Unusual Fire & Explosion:

Emits toxic fumes under fire conditions. Avoid conditions, which produce dust.

Section 6. Accidental Release Measures

Procedures of Personal Precautions:

Wear respirator, chemical safety goggles, and chemical gloves.

Environmental Precautions:

No significant environmental hazards identified. Surfaces subject to spills or dusting with this product can become slippery when wet, use care to avoid falls.

Methods of Cleaning Up:

Sweep or vacuum material from spillage into a waste container for disposal. Avoid production of dust. Do not flush down drains. Place in closed containers. Ventilate area and wash spill site after material pickup is complete.

Waste Disposal Method:

Follow safe solid waste disposal guidelines in accordance with federal, state and local regulations. National or regional provisions may also be in force. It is the responsibility of the generator to determine whether the material meets the criteria of a hazardous waste.

Section 7. Handling and Storage

Handling Precautions:

User Exposure: Avoid handling procedures that produce high levels of dust.

Storage Precautions:

Suitable: Store product in a cool, dry, ventilated area away from sources of heat, moisture, strong oxidizing materials and explosives. Keep containers tightly closed.

Special Requirements:

Under planned use this product should not result in excessive dust or hazards to the user following the recommended processes for creating prototype models.

Section 8. Exposure Controls & Personal Protection

Exposure Limit Values:

The European Member States have different standards for the components in this preparation. These powders are potentially irritant dusts with general exposure standard of 10 mg/m³. Particulates not otherwise classified (total dust) in Germany are 6 mg/m³, and 10 mg/m³ in other European Countries. The respirable dust levels are 5 mg/m³.

Component	IOELVs (UK)	EC OEL	ACGIH TLV	OSHA PEL
1. Plaster	10 mg/m ³ Inhalable 5 mg/m ³ R	10 mg/m ³	10 mg/m ³ Inhalable 3 mg/m ³ R	15 mg/m ³ Total 5 mg/m ³ R
2. Vinyl Polymer	General Dust 10 mg/m ³ Inhalable 4 mg/m ³ R	10 mg/m ³	10 mg/m ³ Inhalable 3 mg/m ³ R	15 mg/m ³ Total 5 mg/m ³ R
3. Carbohydrate	General Dust 10 mg/m ³ Inhalable 4 mg/m ³ R	10 mg/m ³	10 mg/m ³ Inhalable 3 mg/m ³ R	15 mg/m ³ Total 5 mg/m ³ R

Notations:

IOELVs = Indicative Occupational Exposure Limit Values
OEL = Occupational Exposure Limits
R = Respirable

TWA = time weighted average
PEL = Permissible Exposure Limit
TLV = Threshold Limit Value

Exposure Controls:

Ventilation Controls:

Use mechanical ventilation to prevent dust generation, if necessary.

Respiratory Protection:

Respirators are generally not needed under normal conditions of use. If dust levels exceed the exposure limits use a NIOSH-approved dust respirator (N95 or better). In Europe, the respirator must be CE-marked and filter FFP2 or FFP3 for high efficiency.

Protective Gloves:

Avoid skin contact by use of nitrile, PVC-coated or like type chemical resistant gloves. Equipment should conform to EN 374: level 6 or ANSI standard.

Eye Protection:

Safety goggles for dust are recommended during powder additions and cleaning. Equipment should conform to EN 166 or ANSI standards.

Skin Protection:

Special skin protection is not routinely needed when using the product. If clothing becomes contaminated wash contaminated clothing before reuse.

Other Controls:

Safety shower and eyewash. Wash contaminated clothing before reuse. Always use good personal hygiene and housekeeping practices to minimize dust exposures. Wash thoroughly after handling.

Environmental Exposure Controls:

This product is not known to contain chemical components requiring specific environmental exposure controls. Specific environmental requirements however do vary and each user needs to follow local Community environmental protection requirements.