



## 1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Product Name	P400 ABS
Chemical Family	Styrene Terpolymer
General Use	Filament for Stratasys® Inc. FDM™ modeler
Manufacturer and Address	Stratasys Inc. 14950 Martin Drive Minneapolis, MN 55344-2020 USA
Emergency Telephone Number	+1 952-937-3000

## 2. COMPOSITION, INGREDIENT INFORMATION

COMPONENT	CAS #	%	OSHA/PEL	ACGIH/TLV
Acrylonitrile/butadiene/styrene resin	009003-56-9	90-100	N/E	N/E
May contain the following:				
Mineral Oil	008042-47-5	0-2	N/E	N/E
Tallow	067701-27-3	0-2	N/E	N/E
Wax	000110-30-5	0-2	N/E	N/E

N/E = not established. P400 (ABS) is not considered hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR § 1910.1200

## 3. HAZARDS IDENTIFICATION

Emergency Overview	No significant immediate hazards for emergency response are known
HMIS Ratings	Health: 0      Flammability: 1      Reactivity: 0
Inhalation	Dust or vapors may be irritating to the respiratory tract and cause coughing or sneezing
Eye Contact	Dust or vapors that contact the eye may be irritating or cause corneal injury due to mechanical action
Skin Contact	Molten material will produce thermal burns
Ingestion	Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.
Chronic	No relevant information found
Carcinogenicity	No relevant information found
Threshold Limit Value	No established value. Product is inert.



#### 4. EMERGENCY AND FIRST AID MEASURES

Inhalation	Move person to fresh air if effects occur. Consult a physician.
Skin Contact	If molten material comes in contact with skin, do not apply ice. Cool skin under ice water or running water. DO NOT attempt to remove the material from skin. Removal could result in severe tissue damage.
Skin Absorption	Skin absorption is unlikely due to physical properties
Eye Contact	Flush eyes with plenty of water. Remove contact lenses after the first 1-2 minutes then continue flushing for several minutes. Only mechanical effects expected.
Ingestion	No emergency medical treatment necessary

#### 5. FIRE-FIGHTING MEASURES & EXPLOSION HAZARD DATA

Flash Point	None
Method Used	Not applicable
Flammability Limits: LFL, UFL	Not applicable
Autoignition Temperature	Not applicable
Extinguishing Media	Water, fog, foam, alcohol resistant foam, CO <sub>2</sub> , dry chemical
Special Fire-Fighting Procedures	Wear a positive pressure self-contained breathing apparatus (SCBA) and fire fighting clothing and helmet
Unusual Fire and Explosion Hazards	Dense smoke emitted when burned without sufficient oxygen
Hazardous Decomposition Products	During a fire, smoke may contain the original material in addition to combustion products of varying composition products, which may be toxic and/or irritating. Combustion products may include and are not limited to carbon monoxide, carbon dioxide, and nitrogen oxides. Combustion products may include trace amounts of styrene and hydrogen cyanide.
Fire Fighting Instructions	Keep people away from fire. Isolate fire area and deny unnecessary entry. If material is molten, do not apply direct water stream. Use fine water, spray, or foam. Soak thoroughly with water to cool and prevent re-ignition. Cool surroundings with water to localize fire zone. Hand held dry chemical or carbon dioxide extinguishers may be used for small fires.



## 6. ACCIDENTAL RELEASE MEASURES

General	Protect people and the environment by keeping filament in appropriate locations
Specific	Sweep "inert" filament and dispose of properly. Avoid the generation of dust in the area.

## 7. HANDLING & STORAGE

Handling	Keep material dry and avoid temperatures over 70°C Those handling molten resin during fabrication should be protected from possible contact.
Storage	Store in a cool, well-ventilated area. Keep container tightly closed.

## 8. EXPOSURE CONTROLS & PERSONAL PROTECTION

Although some of the additives used in this product may have exposure guidelines, these additives are encapsulated in the product and no exposure would be expected under normal handling conditions.

Ventilation	Provide local exhaust ventilation where heat can cause polymer breakdown, e.g. extrusion, molding and where there is a need to draw dusts and fumes from worker breathing zones.
Respiratory	For conditions where exposure to dust and fumes is apparent, an NIOSH approved respirator for dust mists and fumes appropriate to the airborne concentration may be worn. Where vapors are generated, an NIOSH approved organic respirator suitable to the airborne concentrations is recommended.
Eye Protection	Safety glasses with side shields are recommended for any type of handling. Dust-tight goggles are recommended for dusty operations of areas where vapors accumulate.
Skin	No precautions other than clean body-covering clothing should be used. Use gloves for insulation for thermal protection, when needed.



## 9. PHYSICAL & CHEMICAL PROPERTIES

Appearance	Milky off-white solid
Odor	Odorless
Vapor Pressure	Not applicable
Vapor Density	Not applicable
Melting Point	Not applicable
Boiling Point	Not applicable
Specific Gravity	1.05
Volatile By Volume (Water)	Not applicable
Solubility In Water	Nil
pH	Not applicable

## 10. STABILITY & REACTIVITY

Stability	Stable
Conditions to Avoid	Temperatures over 300° C (572° F) releases combustible gases
Hazardous Polymerization	Will not occur
Incompatibility	Oxidizing materials
Hazardous Thermal Decomposition Products	Decomposition products depend upon temperature, air supply, and the presence of other materials. At temperatures exceeding melt temperatures, polymer fragments can be released. Fumes can be irritating.

## 11. TOXICOLOGICAL DATA

Acute Oral	No data available. Not expected to be harmful.
Acute Dermal	No data available. Not expected to be harmful.
Acute Inhalation	No data available. Not expected to be harmful.
Skin Irritation	No data available. Not expected to be harmful.
Eye Irritation	No data available. Not expected to be harmful.
Genotoxicity	No data available. Not expected to be harmful.



## 12. ECOLOGICAL INFORMATION

Movement and Partitioning	No bioconcentration is expected because of the relatively high molecular weight (MW >1000). In the terrestrial environment, material is expected to remain in the soil. In the aquatic environment, material will sink and remain in the sediment.
Degradation and Persistence	This water insoluble polymeric solid is expected to be inert in the environment. Surface photodegradation is expected with exposure to sunlight. No appreciable biodegradation is expected.
Ecotoxicity	Not expected to be acutely toxic, but material may mechanically cause adverse effects if ingested by waterfowl or aquatic life.

## 13. DISPOSAL CONSIDERATIONS

DO NOT dump into any sewers, on the ground, or into any body of water. Disposal of wastes and used containers must be in accordance with applicable federal, state and local regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. Stratasys Inc. has no control over the management practices or manufacturing processes of parties handling or using the material. The information presented here pertains only to the product as shipped in its intended condition as described in section two of this MSDS (Composition/Information on Ingredients).

## 14. TRANSPORT INFORMATION (NOT MEANT TO BE ALL-INCLUSIVE)

Department of Transportation (D.O.T.)	This product is not regulated by D.O.T. when shipped domestically by land
Canadian TDG Information	This product is not regulated by TDG when shipped domestically by land



## 15. REGULATORY INFORMATION (NOT MEANT TO BE ALL-INCLUSIVE)

All components of this product are listed on these chemical inventories: U.S. TSCA, Canadian DSL, EU EINECS, Japanese ENCS, Korean ECL, Australian AICS.

### U.S. Regulations

#### EPA SARA Title III Chemical Listings

This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (Sara Title III) and is considered under applicable definitions, to meet the following categories:  
Not to have met any hazard category.

#### California Proposition 65

The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986:

Warning: This product contains a chemical(s) known to the State of California to cause cancer.

#### Toxic Substances Control Act (TSCA)

All ingredients are on the TSCA inventory and are not required to be listed on the TSCA inventory.

#### State Right-to-Know

This product is not known to contain any substances subject to the disclosure requirements of: New Jersey and Pennsylvania.

#### OSHA Hazard Communication Standard

This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

### Canadian Regulations

WHMIS Information: The Canadian Workplace Hazardous Materials Information System (WHMIS)

Classification for this product is:

This product is not a "Controlled Product" under WHMIS.



## 16. OTHER INFORMATION

THE INFORMATION contained in the PROCEEDING report is based upon current knowledge, our experience with the product, and is not exhaustive. While not guaranteed, the information presented herein was prepared by a competent, technical professional and is true and accurate to the best of our knowledge. The information applies to product as defined by the specifications. If the product is mixed with other substances, the customer must confirm that no new hazards exist. In all cases, the user is not exempt from following all legal, administrative and regulatory procedures relating to the product, personal hygiene, and the integrity of the work environment. Stratasys Inc. shall not be held liable for any damage resulting from handling or from contact and use with the above product.

### Revision History

Revision	Revision Date
1.0	11/97
1.1	3/15/04
1.2	4/14/04
1.3	9/14/04