

Material Properties

ENGRAVABLE PLASTICS

Material Name: Hi-Tech Series: Metals

Properties:	Typical Values	ASTM Method
Tensile Strength:		
To break:	4,200 psi	D-638
Elongation before break:	50%	D-638
Flexural Strength:		
Load to stretch outer surface 5%	8,000 psi	D-790
Gravity:	1.05	D-792
Rockwell Hardness:	R108, M80	D-785
IZOD Impact Strength		
Notched at 73°F (22.777°C)	2.5 ft lbs/in	D-256
Notched at 32°F (0°C)	1.6 ft lbs/in	D-256
Deflection Temperature		
Temperature at which material deflects .010" (.254mm) at 264 psi	205°F (96.11°C)	D-648
Coefficient of Thermal Expansion		
Inch/inch/°F	3.8 x 10 ⁻⁵	D-696

Hi-Tech Series: Metals softens at about 200°F (93.33°C) sufficiently so that it can be drilled, sawed, sheared, nailed, bonded and die-cut.

The base material was tested for flammability by the Underwriters Laboratories. The material is rated 94 HB on the UL 94 test.



INNOVATIVE PLASTICS INC.

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All IPI products are available only through your Authorized IPI distributor.

Visit www.inoplas.com to locate a distributor in your area.



Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: **Hi-Tech Series: Metals**

Product Synonym(s): Micro-Surfaced ABS

Chemical Family: Polymer

Chemical Formula: Mixture

Chemical Name: Mixture

EPA Reg Number:

Product Use: Interior Signage, Personal Identification, Other

Manufactured By: Innovative Plastics Inc. (IPI)

P.O. Box 7065

Algonquin, IL 60142, USA

EMERGENCY PHONE NUMBERS:

Medical: 911

Poison Control: 800-222-1222

Telephone Numbers

IPI Customer Service

Available Hours

8:30am-4:30pm CST

Phone Number

1-815-477-0778

2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Ingredient Name</u>	<u>CAS Registry Number</u>	<u>Typical Wt. %</u>	<u>OSHA</u>
Acrylonitrile/butadiene/styrene resin	9003-56-9	90-100%	
Aluminium Flake	7429-90-5	1-5%	
Carbon Black	1333-86-4	1-5%	
Copper	7440-50-8	1-5%	
May contain the following:			
Mineral oil	008042-47-5	0-2%	
Tallow	008030-12-4	0-2%	
Wax	000110-30-5	0-2%	

The substance(s) marked with a "Y" in the OSHA column are identified as hazardous chemicals according to the criteria of the OSHA Hazardous Communication Standard (29 CFR 1910.1200).

While this material is not classified as hazardous under Federal OSHA regulations, this MSDS contains valuable information critical to the safe handling and proper use of this product. This MSDS should be retained and available for employees and other users of this product.

The components of this product are all on the TSCA Inventory list.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

Sheet material, various sizes, and mild odor.

CAUTION! MELT PROCESSING RELEASES VAPORS WHICH MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION

POTENTIAL HEALTH EFFECTS:

Skin contact and inhalation of dust are expected to be the primary routes of occupational exposure to this material. Due to its chemical and physical properties, this material does not require special handling other than the good industrial hygiene and safety practices employed with any industrial material of this type.

Ethyl acrylate is listed as a substance that may reasonably be anticipated to be a carcinogen by the National Toxicology Program (NTP) and is classified as "possibly carcinogenic to humans" by the International Agency for Research on Cancer.

4. FIRST AID MEASURES

IF IN EYES:

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. Get medical attention if irritation persists.

IN CASE OF CONTACT:

If molten material comes in contact with the skin, do not apply ice but cool under running stream of water. DO NOT attempt to remove the material from the skin. Removal could result in severe damage. Wash clothing before reuse. Get medical attention if irritation develops and persists.

5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSIVE PROPERTIES:

Auto-Ignition Temperature N/A
Flash Point – N/A Flash Point Method
Flammable Limits: Upper – N/A
Lower –N/A

EXTINGUISHING MEDIA:

Water spray, foam, dry chemical or carbon dioxide.

FIRE FIGHTING INSTRUCTIONS:

Fire fighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear (full Bunker Gear) and self-contained breathing apparatus (pressure demand NIOSH approved or equivalent). Fire fighting equipment should be thoroughly decontaminated after use.

FIRE AND EXPLOSION HAZARDS:

Heated material can form flammable vapors with air.

6. ACCIDENTAL RELEASE MEASURES

IN CASE OF SPILL OR LEAK:

Contain spill. Sweep or scoop up and remove to suitable container. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.

7. HANDLING AND STORAGE

HANDLING:

Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Keep container closed. Use only with adequate ventilation.

STORAGE:

Avoid temperature extremes during storage; ambient temperature preferred.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS:

Adequate ventilation in work area is needed due to dust or vapors created during fabrication.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

EYE/FACE PROTECTION:

Safety glasses or face shield should be used. If exposed to dust, chemical glasses may be required.

SKIN PROTECTION:

No precautions other than clean body-covering clothing should be needed. Use insulated gloves for thermal protection, when desired.

RESPIRATORY PROTECTION:

In dusty atmospheres, use an approved respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE/ODOR:

Various colors, characteristic odor

BOILING POINT:

N/A

VAPOR PRESSURE:

N/A

VAPOR DENSITY:

N/A

SPECIFIC GRAVITY:

1.05-1.12

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY:

Stable

CONDITIONS TO AVOID:

Prolonged contact with acids, alkalis and strong oxidizing agents may attack or dissolve the polymer. Avoid temperatures above 572° F (300° C). Such exposure can cause product to decompose.

11. TOXICOLOGY INFORMATION

No data available

12. ECOLOGICAL INFORMATION

MOVEMENT & PARTITIONING:

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 & PERSISTENCE:

This water insoluble polymeric solid is expected to be inert in the environment. Surface photo degradation is expected with exposure to sunlight. No appreciable biodegradation is expected.

ECOTOXICITY:

Not expected to be acutely toxic, but chips may mechanically cause adverse effects if ingested by waterfowl or aquatic life.

13. DISPOSAL CONSIDERATIONS

Disposal must be in accordance with applicable governmental regulations.

14. TRANSPORT INFORMATION

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 – selected regulations represented)

NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations. See other sections for health and safety information.

U.S. REGULATIONS

PENNSYLVANIA RIGHT TO KNOW

This product does contain the following chemical(s), as indicated below, currently on the Pennsylvania Hazardous Substance List.

Chromium (3+)

Formaldehyde

MASSACHUSETTS RIGHT TO KNOW

This product does contain the following chemical(s), as indicated below, currently on the Massachusetts Right to Know Substance List.

Antimony (3+) Trioxide
Cadmium
3,3'-Dichlorobenzidine
Lead
Vinyl Acetate

Arsenic
Chromium (3+), (6+)
Formaldehyde
Nickel

STATE RIGHT-TO-KNOW

This product is not known to contain any substances subject to the disclosure requirements of:

New Jersey

SARA 313 INFORMATION

This product may contain chemicals, which are listed in Section 313 above the minimum concentration.

Aluminium

Copper

CALIFORNIA PROPOSITION 65

This product may contain trace levels of a component or components known to the state of California to cause birth defects or other reproductive harm:

Toluene

Mercury

This product may contain trace levels of components known to the state of California to cause cancer:

Antimony (3+) Trioxide
Cadmium
3,3'-Dichlorobenzidine
Formaldehyde
Nickel

Arsenic
Chromium (6+)
Ethyl Acrylate
Lead
Selenium Sulphide

TOXIC SUBSTANCES CONTROL ACT (TSCA)

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

16. OTHER INFORMATION

NFPA HAZARD RATING (National Fire Protection Association):

Fire			<u>FIRE:</u>
1			Must be preheated before ignition can occur.
Health 0	0	Reactivity	<u>HEALTH:</u>
–			Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.
Special			<u>REACTIVITY:</u>
			Normally stable, even under fire exposure conditions, and are not reactive with water.

REASON FOR ISSUE:

Innovative Plastics Inc. (IPI) believes that the information provided (including data and statements) are accurate as of the date hereof. No warranty, express or implied, is made concerning the information provided. Contact IPI for further information.