

velleman®

Material Safety Data sheet

Velleman
(Brand)

1.75 mm (1/16") HIPS FILAMENT (different colors)
(Product name)

HIPS175x1 (x denotes color)
(Product identification)

manufactured / imported by:

VELLEMAN NV.
Legen Heirweg, 33
9890 Gavere
Belgium

Description:

Plastic reel with 1kg of 1.75mm (1/16") HIPS filament for use with 3D printers. The reel is vacuum packed in plastic foil together with a bag of desiccant and stored in a cardboard box.

Specifications of the filament are:

Density: 0.994 g/cm³ (@ 21.5 °C) / 0.0359 lb/in³ (@ 70.7 °F)

Print temperature: 220-260 °C / 428-500 °F

Impact strength: 11 kJ/m² / 5.2305 ft-lb/in²

The filament is available in different colors
(x= B: black, W: white)

Chemical Identification:

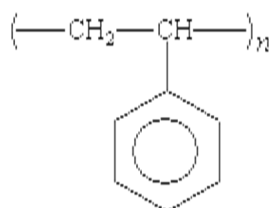
Name: High impact polystyrene

Family: Polymer

Common names: HIPS

Formula: $-(\text{CH}_2\text{CH}(\text{C}_6\text{H}_5)-)_n$

Structure:



Substances:

CAS nr.	identification	Hazard – risk
9003-55-8	Butadiene-styrene copolymer	None known

Quality of selected polymers:

- Butadiene-styrene copolymer 99.9%
- Additives ≤ 0.1%

Health hazard information:

Unlikely to cause irritation

Medical conditions aggravated by exposure: none expected, based on available information

Acute toxicity: no target organ effects noted following ingestion or dermal exposure in animal studies.

Long term toxicity: Did not cause skin allergic reactions in skin sensitization studies using guinea pigs.

First aid:

- Eye contact: Solid may cause corneal injury due to mechanical action, seek medical attention.
Dust may cause irritation, flush with plenty of water for at least 15 min. and seek medical attention if any dust particles remain.
Gases evolved from processing may cause irritation, flush with plenty of water for at least 15 min. and seek medical attention if necessary.
- Skin contact: May cause skin irritation and/or dermatitis. In case of irritation wash with water and seek medical attention if necessary.
In case of mechanical injury seek medical attention.
In case of burns from molten material flush with plenty of water for at least 15 min. and seek medical attention.
- Inhalation: Inhalation of dust may cause shortness of breath, tightness of the chest, sore throat and cough. Inhalation of gases evolved from processing may cause irritation, in case of inhalation of gases move subject to fresh air and seek medical attention.
Burning produces obnoxious and toxic fumes, move subject to fresh air and seek medical attention.
- Ingestion: May cause gastrointestinal irritation, nausea, vomiting and diarrhea.
In case of ingestion induce vomiting, rinse mouth with water and seek medical attention.

Precautions for safe handling and use:

For operations where eye or face contact can occur, eye protection is recommended

Avoid breathing dust, wear a respirator with dust filter if exposed to dust.

Wash hands thoroughly with soap and water after handling

Hot and/or melted polymer can severely burn the skin – handle with care

Extrude only in a well-ventilated area, the processing fumes may cause eye and respiratory tract irritation and in severe cases nausea and headache.

Keep away from fire and sources of ignition. Never burn filament, toxic gasses and vapors will be generated if exposed to fire.

If exposed to fumes from overheating or combustion leave contaminated area and breathe fresh air, seek medical attention if symptoms develop (at a later time).

Exposure control methods:

Use local ventilation to control fumes from hot processing

Fire and explosion hazard information:

Keep away from fire, the material will burn if exposed to sufficient heat and/or an ignition source.
Avoid dispersion of dust in the air to reduce dust explosion hazard

Burning produces obnoxious and toxic fumes, Aldehydes, Carbon monoxide and carbon dioxide

Fire-fighting:

Use water (mist or light spray at first), CO₂, dry chemical powder or foam to extinguish fires
Firefighters must wear self-contained positive pressure breathing apparatus and fully protective equipment. Alcohol resistant foams are preferred if available. General-purpose synthetic foams (including AFFF) or protein foams may function, but are much less effective.
Cool containers/tanks with spray water. Water mist may be used to cool closed containers.

Reactive data:

Stability:	stable
Water solubility:	insoluble
Incompatibility:	Reactive with strong oxidizing agents
Polymerization:	already a polymer
Flammability:	yes
Conditions to avoid:	Dust explosion possible if powder exists
Combustion:	hazardous combustion products are CO, HCN, AN, SM & NO

Physical properties:

Appearance:	solid filament
Odor:	none
Specific gravity:	1.055g/cc
Melting point:	> 100°C (212°F)
Flash point:	404°C (759°F)
Decomposition temp.:	280°C (536°F)
Auto ignition:	466°C (871°F)
Combustion energy:	3.53 x 10 ⁷ J/kg (8424 Kcal/kg)
Explosion data (powder):	< 145 mesh
Lower explosion limit:	45g/m ³
Min. ignition energy:	3.6mJ
Max. explosion pressure:	7 x 10 ⁵ Pa
Max. pressure increase rate:	3.2 x 10 ⁷ Pa/s

Spill or leak procedures:

Collect for disposal, use appropriate personal protective equipment during clean-up

Waste disposal:

Avoid environmental water pollution, do not flush into surface water or sanitary sewer system, disposal of the waste to the ocean and water sources is inhibited to avoid being taken by ocean species or birds.

Disposal must be made in accordance with the applicable governmental regulations, inadequate incineration may generate toxic gases such as CO, HCN, AN en SM.

Storage conditions:

Keep dry in a cool place, when the plastic foil is opened store in a container together with a desiccant to maintain product quality. Keep the container closed until it is ready for use.

Shipping information:

Not regulated as hazardous by DOT/UN/IMDG/ICAO/IATA

The contents and format of this MSDS/SDS are in accordance with REGULATION (EC) No 1907/2006, EU Commission directive 1999/45/EC, 1967/548/EEC

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