MATERIAL SAFETY DATA SHEET

FILE NO.: MSDS-PETG1
NAME OF PRODUCT: 3D Printer Filament **MSDS DATE: 11/03/2018**

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 3D Printer Filament
SYNONYMS: None
PRODUCT CODES: 14385 , 14390 , 33896 , 33895 , 33894 , 33893 , 33892 , 33891 , 33890 , 14392 , 14389 , 14388 , 14387 , 14386 , 14384 , 14383 , 14382

MANUFACTURER: Monoprice, Inc.
ADDRESS: 11701 6th Street, Rancho Cucamonga, CA 91730

SECTION 1 NOTES:

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical characterization: **Mixtures**
Description:

Common Chemical Name	CAS Number	Hazard
PETG	25038-91-9	None known

SECTION 2 NOTES:

SECTION 3: First Aid Measures

INGESTION
• Immediately give a glass of water.
• First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.
EYE
If this product comes in contact with eyes:
• Wash out immediately with water.
• If irritation continues, seek medical attention.
• Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
SKIN
If skin or hair contact occurs:
• Flush skin and hair with running water (and soap if available).
• Seek medical attention in event of irritation.
Inhalation
• If dust is inhaled, remove from contaminated area.
• Encourage patient to blow nose to ensure clear passage of breathing.
• If irritation or discomfort persists seek medical attention.
Indication of any immediate medical attention and special treatment needed
• Treat symptomatically.

SECTION 3 NOTES:

SECTION 4: Firefighting Measures

EXTINGUISHING MEDIA
• Do NOT direct a solid stream of water or foam into burning molten material; this may cause spattering and spread the fire.
• Foam.
• Dry chemical powder.
• BCF (where regulations permit).

FIRE FIGHTING
• Alert Fire Brigade and tell them location and nature of hazard.
• Wear breathing apparatus plus protective gloves.
• Prevent, by any means available, spillage from entering drains or water courses.
• Use water delivered as a fine spray to control fire and cool adjacent area.

FIRE/EXPLOSION HAZARD
• Combustible solid which burns but propagates flame with difficulty.
• Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions).

FIRE INCOMPATIBILITY
• Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc.as ignition may result

SECTION 4 NOTES:

SECTION 5: Accidential Release Measures

MINOR SPILLS
• Generally not applicable

MAJOR SPILLS
• Generally not applicable

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 5 NOTES:

SECTION 6: Handling & Storage

PROCEDURE FOR HANDLING
• Limit all unnecessary personal contact.
• Wear protective clothing when risk of exposure occurs.
• Use in a well-ventilated area.
• Avoid contact with incompatible materials.
• Store in original containers.
• Keep containers securely sealed.
• Store in a cool, dry, well-ventilated area.
• Store away from incompatible materials and foodstuff containers.

SUITABLE CONTAINER
• Multi-ply paper bag with sealed plastic liner or heavy gauge plastic bag.
• NOTE: Bags should be stacked, blocked, interlocked, and limited in height so that they are stable and secure against sliding or collapse. Check that all containers are clearly labelled and free from leaks. Packing as recommended by manufacturer.

STORAGE INCOMPATIBILITY
• Avoid reaction with oxidising agents

SECTION 6 NOTES:

SECTION 7: Exposure Controls, Personal Protection

EXPOSURE CONTROLS
Appropriate engineering controls
For molten materials:
Provide mechanical ventilation; in general such ventilation should be provided at compounding/ converting areas and at fabricating/ filling work stations where the material is heated. Local exhaust ventilation should be used over and in he vicinity of machinery involved in handling the molten material.
Keep dry!!
Processing temperatures may be well above boiling point of water, so wet or damp material may cause a serious steam explosion if used in unvented equipment.
Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard.

PERSONAL PROTECTION
Eye and face protection
• Safety glasses with side shields.
• Chemical goggles.
• Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.
Skin protection
See Hand protection below
Hands/feet protection
The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior

to the application.
The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.
Suitability and durability of glove type is dependent on usage.
Body protection
See Other protection below
Other protection
• Overalls.
• P.V.C. apron.
• Barrier cream.

SECTION 7 NOTES:

SECTION 8: Physical and Chemical Properties

Information on basic physical and chemical properties

Odour	**Odorlessness**
Form	Solid
Melting Range (°C)	No data
Boiling Range (°C)	No data
Flash Point (°C)	No data
Decomposition Temp (°C)	No data
Autoignition Temp (°C)	No data
Upper Explosive Limit (%)	No data
Lower Explosive Limit (%)	No data
Volatile Component (%vol)	No data
Solubility in water (g/L)	Insoluble in water
p H (1% solution)	No data
p H (as supplied)	No data
Print Temp (°C)	230-250
Bed Temp(°C)	No Heat/80
Density(g/cm3)	1.23
Distortion Temp（℃,0.45MPa）	64
Melt Flow Index（g/10min）	20(250℃/2.16kg)
Tensile Strength（MPa）	49
Elongation at Break（%）	228
Bending Strength（MPa）	68
Flexural Modulus（MPa）	2027
IZOD Impact Strength（KJ/m2）	8

SECTION 8 NOTES:

SECTION 9: Stability and Ractivity

Reactivity
See section 7
Chemical stability
• Unstable in the presence of incompatible materials.
• Product is considered stable.
• Hazardous polymerisation will not occur.

SECTION 9 NOTES:

SECTION 10: Toxicological Information

Information on toxicological affects
Acute Toxicity
LD/LC50 values relevant for classification
No data.
Primary irritant effect
On the skin
No data.
On the eyes
No data.
Inhaled
No data.

Sensitization : No data.

SECTION 10 NOTES:

SECTION 11: Ecological Information

Ingredient	**Persistence:Water/Soil**	**Persistence: Air**	**Bioaccumulation**	**Mobility**
PETG	LOW	LOW	LOW	LOW

SECTION 11 NOTES:

SECTION 12: Disposal Considerations

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.
A Hierarchy of Controls seems to be common - the user should investigate:
• Reduction
• Reuse
• Recycling
• Disposal (if all else fails)
This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use.

SECTION 13: Transport Considerations

Labels Required
Marine Pollutant: NO
NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: ADR, IATA, IMDG,ADN

SECTION 14: TRANSPORT INFORMATION

US Department of Transportation (DOT):
Proper shipping name: None
Hazard Class: Not regulated
UN-No: None
Packing Group: None
Hazardous substances (RQ): none

IMDG
Hazard Class: Not regulated
UN Number: None
Packing Group: None

Air Transportation
ICAO / IATA Class: None
Hazard Class: Not regulated
UN-No: None
Packing Group: None

SECTION 14 NOTES:

SECTION 15: Regulatory Information

U.S. FEDERAL REGULATIONS
TSCA (TOXIC SUBSTANCE CONTROL ACT): Not Listed

SECTION 16: OTHER INFORMATION

OTHER INFORMATION:

DISCLAIMER: This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.