



Safety Data Sheets

I.C.R:PC-09.18

Revision Date:22/03/17

Revision Number: 00

SAFETY DATA SHEET

In accordance with 29 CFR 1910.1200:2012, ANSI Z400.1-2010, and ISO 11014-1: 2009.

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product Name:

ABS 3D Printer Monofilament.

Chemical name:

Acrylonitrile-Butadiene-Styrene Copolymer.

Product Use:

3D Printing

Supplier:

Nicieza y Taverna Hnos. S.A.I.C.y A., 6620, Chivilcoy, Buenos Aires , Argentina.

Emergency telephone numbers (24 hours a day):

(Medical Information) (651) 632-9273 (Transportation Information) CHEMTREC: 800-424-9300 (in the United States) (Transportation Information) CHEMTREC: (703) 527-3887 (outside the United States)

2. HAZARDS IDENTIFICATION

A. GHS Classification : Not applicable

B. GHS label elements

- Hazard symbols : Not applicable
- Signal word : Not applicable
- Hazard statement : Not applicable
- Precautionary statements : Not applicable

C. Other hazards which do not result in classification :

- NFPA rating: (0~4 steps) : Health=1, Flammability=1, Reactivity=0

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3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No./ECL No./EINECS No.	Contents(%)
Acrylonitrile-butadiene-styrene co-polymer	9003-56-9/KE-29398/-	97~100
Stabilizer	Proprietary	0~1
Lubricant	Proprietary	0~2
Acrylonitrile monomer	107-13-1/KE-29393/203-466-5	<0.1
Butadiene monomer	106-99-0/KE-3719/203-450-8	<0.1
Styrene monomer	100-42-5/KE-35342/202-851-5	<0.1

4. FIRST AID MEASURES

Emergency telephone numbers (24 hours a day):

- **(Medical Information) (651) 632-9273**
- **(Transportation Information) CHEMIREC: 80 -424-930 (in the United States)**
- **(Transportation Information) CHEMIREC: (703) 527-387 (outside the United States)**

A. Eye Contact :

- Immediately flush eyes with plenty of water at least 15 minutes.
- If irritation persists, get a doctor's examination.
- Lifting eyelids occasionally to wash eyelids down enough to follow up.

B. Skin Contact :

- Wash the contaminated skin area with running water.
- Cooling the contaminated skin with cool running water when contact with melt.
- Get medical attention when burn by melt.

C. Inhalation :

- Remove exposed person to fresh air.
- Remove victim to fresh air and keep at rest in a position comfortable.
- Get medical attention.

D. Ingestion :

- Rinse mouth with water.
- Give large amounts of water.
- Toxic by ingestion does not high.
- If irritation or symptoms occurs, get a doctor's examination.

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E. Delay and immediate effects and also chronic effects from short and long term exposure : Not available

F. Notice to Physician :

- Treatment may vary with condition of victim and specifics of incident.

5. FIRE-FIGHTING MEASURES

Suitable (Unsuitable) extinguishing media :

- Extinguishing media : Carbon Dioxide, Dry Chemical, Water.
- Unsuitable Extinguishing media : Do not use direct water.
- Big Fire : Water spray, regular foam

Specific hazards arising from the chemical

- Combustion : Carbon monoxide, Carbon dioxide, hydrogen cyanide
- Levels of fire hazard : Not available

Fire fighting procedures and equipments :

- Wear appropriate personal protective equipment(see section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION).
- Avoid inhalation of smoke or gas when fire fighting.
- Move container from fire area if it can be done without risk.
- Cool containers with water until well after fire is out.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Use personal protective equipment. Avoid contact with skin and eyes. Avoid dust formation. Remove all sources of ignition. Sweep up to prevent slipping hazard.

Environmental precautions: Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system.

Methods for cleaning up: Clean up promptly by scoop or vacuum. Sweep up and shovel into suitable containers for disposal.

7. HANDLING AND STORAGE

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Precautions for Safe Handling

Minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations.

Conditions for Safe Storage, Including any Incompatibilities

None needed according to classification criteria.

Store in a cool dry place. Store below 50 C. Avoid heat, flames, sparks and other sources of ignition. Keep away from incompatible materials.

Incompatible Materials

Oxidizing agents.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

A. Exposure limit

- Exposure limit under ISHL : Not applicable
- ACGIH : Not applicable
- Biological exposure limits : Not applicable

B. Engineering Controls

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

C. Personal Protective Equipment :

☐ Respiratory Protection : Use the respirator be given official approval by Korea Occupational Safety & Health Agency. Under conditions of frequent use or heavy exposure, Respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.

- Dust, mist, fume-purifying respiratory protection
- Any air-purifying respirator with a corpuscle filter of high efficiency
- Any respiratory protection with a electromotion fan(for dust, mist, fume-purifying)

✖ For Unknown Concentration or Immediately Dangerous to Life or Health

- Self-contained breathing apparatus (pressure-demand or other positive-pressure mode in combination)

- Supplied-air respirator with full facepiece

☐ Eye Protection : Wear primary eye protection such as splash resistant safety goggles with a secondary protection faceshield. Provide an emergency eye wash station and quick drench shower in the immediate work area.

☐ Hand Protection : Wear chemical resistant protected gloves if there is hazard

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potential for direct skin contact. Wear heat resistant protected gloves to withstand the temperature of molten product.

□ Body Protection : Wear chemical resistant protected clothing if there is hazard potential for direct contact.

9. PHYSICAL AND CHEMICAL PROPERTIES OF THE POLYMER

Appearance : Solid

Odor : Distinctive odor

Odor threshold : Not available

pH : 7

Melting point/Freezing point : Not applicable

Initial Boiling Point/Boiling Ranges : Not applicable

Flash point : 349°C(660°F)

Evapourating Rate : Not applicable

Flammability(solid, gas) : 1/16" HB(UL 94)

Upper/Lower Flammability or explosive limits : Not available

Vapour pressure : Not applicable

Solubility :

Water : Insoluble

Acetone, MEK, dichloromethane: Soluble Alcohol, Mineral Oil: insoluble

Vapour density(Air=1) : Not applicable

Relative density : 1.02~1.17

Partition coefficient of n-octanol/water : Not available

Autoignition Temperature : 455°C

Decomposition Temperature : Not applicable

Viscosity : Not applicable

Molecular weight : 50,000~200,000

10. STABILITY AND REACTIVITY

A. Stability

- This material is stable under recommended storage and handling conditions
- Decompose at 320°C on heating.

B. Possibility of Hazardous Reaction

- Will not occur.

C. Conditions to Avoid

- Avoid contact with heat.
- Avoid contact with heat, sparks, flame or other ignition sources.

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D. Materials to Avoid
- Strong oxidizing agents.

E. Hazardous Decomposition Products
- Hydrogen cyanide
- Generate monomer, oxides, gas/steam, hydrocarbon, low-molecular oligomers ring, gas products when heated to high temperature.

11. TOXICOLOGICAL INFORMATION

- A. Information on the likely routes of exposure
- ☐ (Respiratory tracts) : Not available
 - ☐ (Oral) : Not available
 - ☐ (Eye · Skin) : Not available
- B. Delayed and immediate effects and also chronic effects from short and long term exposure
- ☐ Acute toxicity : Not available
 - ☐ Skin corrosion/irritation : Not available
 - ☐ Serious eye damage/irritation : Not available
 - ☐ Respiratory sensitization : Not available
 - ☐ Carcinogenicity : Not available
 - ☐ Germ cell mutagenicity : Not available
 - ☐ Reproductive toxicity : Not available
 - ☐ Specific target organ toxicity(single exposure) : Not available
 - ☐ Specific target organ toxicity(repeated exposure) : Not available
 - ☐ Aspiration hazard : Not available
 - ☐ Chronic effect : Not available
- C. Calculation the classification of the mixture(acute toxicity estimate calculation etc.) : Not applicable

12. ECOLOGICAL INFORMATION

- A. Ecotoxicity : Not available
- B. Persistence and degradability : Not applicable

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- C. Bioaccumulative potential : Not applicable
- D. Mobility in soil : Not available
- E. Other adverse effects : Not applicable

13. DISPOSAL CONSIDERATIONS

- A. Disposal methods
 - The user of this product must properly characterize the waste/container generated from the use of this product in accordance with all applicable federal, state and/or local laws and regulations in order to determine the proper disposal of the waste in accordance with all applicable federal, state and/or local laws and regulations.
- B. Special precautions for disposal :
 - The user of this product must disposal by oneself or entrust to waste disposer or person who other' s waste recycle and dispose, person who establish and operate waste disposal facilities.
 - Dispose of waste in accordance with local regulation.

14. TRANSPORT INFORMATION

- A. UN number : Not regulated for transport of dangerous goods
- B. Proper shipping name : Not applicable
- C. Hazard class : Not applicable
- D. Packing group : Not applicable
- E. Marine pollutant : Not applicable
- F. Special precautions for user related to transport or transportation measures :
 - 1) EmS FIRE SCHEDULE : F-A
 - 2) EmS SPILLAGE SCHEDULE : S-H

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15. REGULATORY INFORMATION

- A. Korea Industry Safety and Health Law (ISHL) :**
- This product is not subject to the chemical for classification and labeling under ISHL Article 41.
- B. The Toxic Chemical Control Act in Korea (TCCA)**
- This product is not classified as Toxic chemical and Observational chemical under TCCA Article 2.3. and 2.4.
 - Toxic Release Inventory (TRI) Chemicals: Not regulated
- C. Dangerous goods Safety Management Law in Korea : Not applicable**
- D. US regulations**
- OSHA regulation (29CFR1910.119) : Not applicable
 - CERCLA section 103 (40CFR302.4) : Not applicable
 - EPCRA section 302 (40CFR355.30) : Not applicable
 - EPCRA section 304 (40CFR355.40) : Not applicable
 - EPCRA section 313 (40CFR372.65) : Not applicable
- E. Other local or international regulation**
- POPs Management Law : Not applicable
 - Rotterdam Convention on Harmful Chemicals & Pesticides : Not applicable
 - Stockholm Convention on Persistent Organic Pollutants : Not applicable
 - Montreal Protocol on Substances That Deplete the Ozone Layer : Not applicable
 - Information of EU Classification : Not available

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16. OTHER INFORMATION

A. Reference

- This MSDS is prepared in accordance with ISHL Article 41 and MOL Notification No. 09-68 in Korea and consider the internal regulations

B. Issue date : 2010. 03. 03

C. Revision number and Last revised : Not applicable

D. Other information : Not available

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