

PLA + Safety Data Sheet

In accordance with paragraph (d) of 29 CFR 1910.1200:2012 Regulation (EU) No. 1907/2006

Section 1. Chemical Product and Company identification

Product Name	KODAK 3D Printing Filament PLA +
Importer	Smart International Inc. 2035 Sunset Lake Road Newark, Delaware 19702 USA. Email: support@smart3d.tech USA Emergency Poison Control Hot Line (24/7): 1 (800) 222-1222 or call your LOCAL POISON CONTROL CENTER

Section 2. Hazards Identification

GHS Classification	Not applicable	Precautionary statements	
GHS label elements Hazard symbols	None needed	Prevention	None needed
Signal word	None needed	Response	None needed
Hazard statement	None needed - Harmful if swallowed	Storage	None needed

EU Classification	
Classification of substance or mixture	REGULATION (EC) No 1272/2008 - This product is not classified as dangerous according to EC criteria.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulation.
OSHA Regulatory Status	This product is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)
Other hazards	NFPA rating: (0-4 steps) Health=1, Flammability=0, Reactivity=0

Section 3. Composition

Chemical name	Acrylonitrile-Butadiene-Styrene Copolymer
Chemical Family	Polymer, thermoplastic copolymer
Product Use	Monofilament for FFF 3D Printing

Chemical name	CAS n./ECL n./EINECS n.	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

Section 4. First-Aid Measures

Skin Contact	It is unlikely that first aid shall be needed. In case of contamination, rinse skin with running water. Molten material may cause thermal burns. Get medical attention when in case of burn or skin irritation.
Inhalation	Heating may release irritating fumes. Move exposed person to fresh air keep at rest in a comfortable position. Drink water to clean the throat and blow nose to remove the dust. Get medical advice.
Eye Contact	It is unlikely that first aid shall be needed. In case of dust in the eyes, rinse immediately eyes with plenty of water at least 15 minutes. If irritation persists, get medical advice from and ophthalmologist.
Ingestion	Not likely due to nature of product. It is unlikely that first aid shall be needed. The product is not considered toxic. Drink plenty of water. It may cause gastrointestinal blockage, get medical advice.
Notice to Physician	It is unlikely that first aid shall be needed if the product is used under ordinary conditions. Treat symptomatically according to victim's conditions and specifics of incident.
Antidote	None known. Treat symptomatically and supportively.



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Section 5. Fire-fighting Measures

Flammability	Autoignition temperature: 455°C
Suitable extinguishing media	Water, foam, regular dry chemical, carbon dioxide
Unsuitable extinguishing media	None known
Specific hazards arising from the chemical	Avoid generating dust. Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
Hazardous Combustion Products	Carbon monoxide, Carbon dioxide, Hydrogen cyanide, HCN, Acrylonitrile, Styrene monomer. Levels of fire hazard: Not available
Fire fighting procedures and equipment	Wear appropriate personal protective equipment (see section 9. EXPOSURE CONTROLS/PERSONAL PROTECTION). Avoid inhalation of smoke or gas when fire fighting. Use self contained breathing apparatus (SCBA) for protection against possible exposure. Isolate hazard area and deny entry. Stay upwind and keep out of low areas. Move container from fire area if it can be done without risk. Cool containers with water until well after fire is out.
Special Protective Equipment and Precautions for Firefighters	Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas

Section 6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency procedures	Perform in accordance with section 9. EXPOSURE CONTROLS/PERSONAL PROTECTION. Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.
Methods and Materials for Containment and Cleaning Up	Where possible allow leak of molten material to solidify before disposal in an appropriate container. Dispose in accordance with all applicable regulations.
Environmental Precautions	Avoid dispersal of spilt material and runoff and contact with waterways, drains, sewers and basements or confined areas. If large spills, advise emergency services. Comply with all applicable regulations on spill and release reporting.

Section 7. Handling and Storage

Handling	Keep away from the molten plastic while printing in case of being burned.
Storage	Store at temperatures not exceeding 50°C/122°F. Keep cool. Avoid heat, flames, sparks and other sources of ignition. Keep away from incompatible materials.
Incompatible Materials	Oxidizing agents

Section 8. Exposure Controls / Personal Protection

Exposure limit under ISHL	Not applicable	EU - Occupational Exposure (98/24/EC) - Binding Biological Limit Values and Health	
ACGIH	Not applicable		
Biological exposure limits	Not applicable		
Personal Protective Equipment		Surveillance Measures	There are no biological limit values for any of this product's components
Respiratory Protection	No respirator is required under normal conditions of use. Under conditions of frequent use or heavy exposure, Respiratory protection may be needed	Engineering Controls	A system of local and/or general exhaust ventilation system is recommended to keep exposure below the Exposure Limits. Local exhaust ventilation is considered sufficient to effectively remove emissions (dusts and fumes) of the contaminant at its source, preventing dispersion during handling or thermal processing.
Eye/face/skin Protection	None during normal use. Protect against molten solid by wearing protective gloves.		



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Section 9. Physical & Chemical Properties

Appearance	Monofilament, spool
Physical State	Solid
Odor	Odorless, plastic
pH	7
Melting point	Not available
Initial Boiling Point/Boiling Ranges	Not available
Flash point	349°C (660°F)
Evapourating Rate	Not available
Flammability (solid, gas)	1/16" HB (UL94)
Upper/Lower Flammability or explosive limits	Not available
Vapour pressure	Not available
Solubility	Insoluble
Vapour density (Air=1)	Not available
Relative density	1.02-1.17
Partition coefficient of n-octanol/water	Not available
Autoignition Temperature	455°C
Decomposition Temperature	Not available
Viscosity	150-170°C
Molecular weight	50,000-200,000

Section 10. Stability & Reactivity

Reactivity/Stability	This product is chemical stable under recommended storage, handling, use and temperature conditions.
Possibility of Hazardous Reaction	Will not polymerize.
Conditions to Avoid	Avoid contact with heat above 320°C, sparks, flame or other ignition sources.
Materials to Avoid	Strong oxidizing agents.
Hazardous Decomposition Products	Gas/steam, oxides of carbon, oxides of nitrogen, HCN, acrylonitrile, styrene monomer.

Section 11. Toxicological Information

Information on the likely routes of exposure	
Inhalation	No data available. Not expected to be harmful. Dust may cause irritation of the upper respiratory tract.
Ingestion	No data available. Not expected to be harmful.
Eye/Skin	No data available. Not expected to be harmful. Molten material may cause burns.
Genotoxicity	No data available. Not expected to be harmful.
Medical Conditions Aggravated by Exposure	No data available.

Section 12. Ecological Information

Aquatic Toxicity	No information is available. Toxicity is expected to be low based on insolubility in water.
Component Analysis - Aquatic Toxicity	
Styrene	100-42-5
Fish	LC50 96 h Pimephales promelas 3.24 - 4.99 mg/L [flow-through]; LC50 96 h Lepomis macrochirus 19.03 - 33.53 mg/L [static]; LC50 96 h Pimephales promelas 6.75 - 14.5 mg/L [static]; LC50 96 h Poecilia reticulata 58.75 - 95.32 mg/L [static]
Algae	EC50 72 h Pseudokirchneriella subcapitata 1.4 mg/L IUCLID; EC50 96 h Pseudokirchneriella subcapitata 0.72 mg/L IUCLID; EC50 72 h Pseudokirchneriella subcapitata 0.46 - 4.3 mg/L [static] EPA; EC50 96 h Pseudokirchneriella subcapitata 0.15 - 3.2 mg/L [static] EPA
Invertebrate	EC50 48 h Daphnia magna 3.3 - 7.4 mg/L EPA
Persistence and Degradability	No information available for the product
Bioaccumulative Potential	No information available for the product.
Mobility	No information available for the product.

Section 13. Disposal Considerations

Disposal methods	Dispose of contents/container in accordance with applicable local, regional, national, and/or international laws and regulations. Avoid release to the environment. Incineration should be done in accordance with prevailing municipal, state, and federal laws and standards from local environmental agencies.
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Section 14. Transport Information

US DOT Information		IMDG:	
UN/NA number	Not regulated for transport of dangerous goods	UN/Id No.:	Not regulated for transport of dangerous goods
Proper shipping name	None	Proper shipping name	None
Hazard class	Not applicable	Hazard class	Not applicable
Packing group	None	Packing group	None
ICAO/IATA		This material contains one or more of the following chemicals required by the IBC Code to be identified as dangerous chemicals in bulk.	
UN-No.	Not regulated for transport of dangerous goods		
Proper shipping name	None		
Hazard class	Not applicable		
Packing group	None	Styrene	100-42-5
		IBC Code	Category Y

Section 15. Regulatory Information

U.S. Federal Regulations	This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.
Styrene	100-42-5
SARA 313	0.1 % minimum concentration
CERCLA	1000 lb final RQ; 454 Kg final RQ

Component Analysis - Inventory													
	US	CA	EU	AU	PH	JP(ENCS)	JP (ISHL)	KR (KECI/KECL)	KR (TCCA)	CN	NZ	MX	TW
ABS resin (9003-56-9)	Yes	DSL	No	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes
Styrene (100-42-5)	Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes

NFPA Ratings	
Health	0
Fire	1
Reactivity	0
Hazard Scale	0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe
Issue date	2017. 10. 28

Disclaimer:

This SDS, based on current knowledge and experience, contains a general summary of hazards and is consistent with the information provided by the supplier. No liability can be assumed for the accuracy and completeness of this information. The information in this SDS applies for this specific material only. It therefore does not apply for its usage in combination with other materials or ways of processing. It is user's responsibility to read and understand this information and incorporate it into individual safety programs, according to all legal and regulatory applicable procedures. Smart International gives no warranty whatsoever, including the warranties of merchantability or of fitness for a particular purpose. Any product purchased is sold on the assumption the user shall determine the quality and suitability of the product. Smart International expressly disclaims any and all liability for incidental, consequential or any other damages arising out of the use or misuse of this product. No information provided shall be deemed to be a recommendation to use any product in conflict with any existing patent rights.

