

## ABS · 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

<b>Product Name</b>	KODAK 3D Printing Filament ABS
<b>Importer</b>	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

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

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

### Section 3. Composition

<b>Chemical name</b>	Acrylonitrile-Butadiene-Styrene Copolymer
<b>Chemical Family</b>	Polymer, thermoplastic copolymer
<b>Product Use</b>	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

<b>Skin Contact</b>	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.
<b>Inhalation</b>	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.
<b>Eye Contact</b>	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.
<b>Ingestion</b>	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.
<b>Notice to Physician</b>	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.
<b>Antidote</b>	None known. Treat symptomatically and supportively.



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### Section 5. Fire-fighting Measures

<b>Flammability</b>	Autoignition temperature: 455°C
<b>Suitable extinguishing media</b>	Water, foam, regular dry chemical, carbon dioxide
<b>Unsuitable extinguishing media</b>	None known
<b>Specific hazards arising from the chemical</b>	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.
<b>Hazardous Combustion Products</b>	Carbon monoxide, Carbon dioxide, Hydrogen cyanide, HCN, Acrylonitrile, Styrene monomer. Levels of fire hazard: Not available
<b>Fire fighting procedures and equipment</b>	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.
<b>Special Protective Equipment and Precautions for Firefighters</b>	Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas

### Section 6. Accidental Release Measures

<b>Personal Precautions, Protective Equipment and Emergency procedures</b>	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.
<b>Methods and Materials for Containment and Cleaning Up</b>	Where possible allow leak of molten material to solidify before disposal in an appropriate container. Dispose in accordance with all applicable regulations.
<b>Environmental Precautions</b>	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

<b>Handling</b>	Keep away from the molten plastic while printing in case of being burned.
<b>Storage</b>	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.
<b>Incompatible Materials</b>	Oxidizing agents

### Section 8. Exposure Controls / Personal Protection

<b>Exposure limit under ISHL</b>	Not applicable	<b>EU - Occupational Exposure (98/24/EC) - Binding Biological Limit Values and Health</b>	
<b>ACGIH</b>	Not applicable		
<b>Biological exposure limits</b>	Not applicable		
<b>Personal Protective Equipment</b>		<b>Surveillance Measures</b>	There are no biological limit values for any of this product's components
<b>Respiratory Protection</b>	No respirator is required under normal conditions of use. Under conditions of frequent use or heavy exposure, Respiratory protection may be needed	<b>Engineering Controls</b>	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.
<b>Eye/face/skin Protection</b>	None during normal use. Protect against molten solid by wearing protective gloves.		



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### Section 9. Physical & Chemical Properties

<b>Appearance</b>	Monofilament, spool
<b>Physical State</b>	Solid
<b>Odor</b>	Odorless, plastic
<b>pH</b>	7
<b>Melting point</b>	Not available
<b>Initial Boiling Point/Boiling Ranges</b>	Not available
<b>Flash point</b>	349°C (660°F)
<b>Evapourating Rate</b>	Not available
<b>Flammability (solid, gas)</b>	1/16" HB (UL94)
<b>Upper/Lower Flammability or explosive limits</b>	Not available

<b>Vapour pressure</b>	Not available
<b>Solubility</b>	Insoluble
<b>Vapour density (Air=1)</b>	Not available
<b>Relative density</b>	1.02-1.17
<b>Partition coefficient of n-octanol/water</b>	Not available
<b>Autoignition Temperature</b>	455°C
<b>Decomposition Temperature</b>	Not available
<b>Viscosity</b>	150-170°C
<b>Molecular weight</b>	50,000-200,000

### Section 10. Stability & Reactivity

<b>Reactivity/Stability</b>	This product is chemical stable under recommended storage, handling, use and temperature conditions.
<b>Possibility of Hazardous Reaction</b>	Will not polymerize.

<b>Conditions to Avoid</b>	Avoid contact with heat above 320°C, sparks, flame or other ignition sources.
<b>Materials to Avoid</b>	Strong oxidizing agents.
<b>Hazardous Decomposition Products</b>	Gas/steam, oxides of carbon, oxides of nitrogen, HCN, acrylonitrile, styrene monomer.

### Section 11. Toxicological Information

<b>Information on the likely routes of exposure</b>	
<b>Inhalation</b>	No data available. Not expected to be harmful. Dust may cause irritation of the upper respiratory tract.
<b>Ingestion</b>	No data available. Not expected to be harmful.

<b>Eye/Skin</b>	No data available. Not expected to be harmful. Molten material may cause burns.
<b>Genotoxicity</b>	No data available. Not expected to be harmful.
<b>Medical Conditions Aggravated by Exposure</b>	No data available.

### Section 12. Ecological Information

<b>Aquatic Toxicity</b>	No information is available. Toxicity is expected to be low based on insolubility in water.
<b>Component Analysis - Aquatic Toxicity</b>	
<b>Styrene</b>	100-42-5
<b>Fish</b>	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]

<b>Algae</b>	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
<b>Invertebrate</b>	EC50 48 h Daphnia magna 3.3 - 7.4 mg/L EPA
<b>Persistence and Degradability</b>	No information available for the product
<b>Bioaccumulative Potential</b>	No information available for the product.
<b>Mobility</b>	No information available for the product.

### Section 13. Disposal Considerations

<b>Disposal methods</b>	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:	
<b>UN/NA number</b>	Not regulated for transport of dangerous goods	<b>UN/Id No.:</b>	Not regulated for transport of dangerous goods
<b>Proper shipping name</b>	None	<b>Proper shipping name</b>	None
<b>Hazard class</b>	Not applicable	<b>Hazard class</b>	Not applicable
<b>Packing group</b>	None	<b>Packing group</b>	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.	
<b>UN-No.</b>	Not regulated for transport of dangerous goods		
<b>Proper shipping name</b>	None		
<b>Hazard class</b>	Not applicable		
<b>Packing group</b>	None		
<b>Styrene</b>	100-42-5	<b>IBC Code</b>	Category Y

### Section 15. Regulatory Information

<b>U.S. Federal Regulations</b>	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.
<b>Styrene</b>	100-42-5
<b>SARA 313</b>	0.1 % minimum concentration
<b>CERCLA</b>	1000 lb final RQ; 454 Kg final RQ

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

NFPA Ratings	
<b>Health</b>	0
<b>Fire</b>	1
<b>Reactivity</b>	0
<b>Hazard Scale</b>	0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe
<b>Issue date</b>	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.

**⚠ WARNING:** This Filament - when used in the operation of 3D Printers or 3D Pens - can expose you and others in the same room to styrene, a chemical known to the State of California to cause cancer. [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov). **ALWAYS OPERATE THIS PRODUCT IN A WELL-VENTILATED AREA.**