MATERIAL SAFETY DATA SHEET SILVER INK

Version Number 1.0 Revision Date 08/16/2012 Page 1 of 6 Print Date 8/29/2012

1. PRODUCT AND COMPANY IDENTIFICATION

POLYONE CORPORATION 33587 Walker Road, Avon Lake, OH 44012

Telephone Emergency telephone	:	1 (440) 930-1000 or 1 (866) POLYONE CHEMTREC 1-800-424-9300 (24hrs for spill, leak, fire, exposure or accident).
Product name	:	SILVER INK
Product code	:	CC10168195
Chemical Name	:	Mixture
CAS-No.	:	Mixture
Product Use	:	Industrial Applications

2. COMPOSITION/INFORMATION ON REGULATED INGREDIENTS

Components	CAS-No.	Weight percent
Titanium dioxide	13463-67-7	5 - 10
Mica	12001-26-2	10 - 30

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

This mixture has not been evaluated as a whole. Information provided on the health effects of this product is based on individual components. All ingredients are bound and potential for hazardous exposure as shipped is minimal. However, some vapors may be released upon heating and the end-user (fabricator) must take the necessary precautions (mechanical ventilation, respiratory protection, etc.) to protect employees from exposure.

POTENTIAL HEALTH EFFECTS

: Inhalation, Ingestion, Skin contact
: Resin particles, like other inert materials, can be mechanically irritating.
: May be harmful if swallowed.
: Resin particles, like other inert materials, are mechanically irritating to eyes.
: Experience shows no unusual dermatitis hazard from routine handling.
: Refer to Section 11 for Toxicological Information.



MATERIAL SAFETY DATA SHEET SILVER INK

Version Number 1.0 Revision Date 08/16/2012 Page 2 of 6 Print Date 8/29/2012

Medical Conditions Aggravated by Exposure:	: None known.
	4. FIRST AID MEASURES
Inhalation	: Move to fresh air in case of accidental inhalation of fumes from overheating or combustion. When symptoms persist or in all cases o doubt seek medical advice.
Ingestion	: Do not induce vomiting without medical advice. When symptoms persist or in all cases of doubt seek medical advice.
Eyes	: Rinse immediately with plenty of water, also under the eyelids, for a least 15 minutes. If eye irritation persists, seek medical attention.
Skin	: Wash off with soap and plenty of water. If skin irritation persists seek medical attention.
	5. FIRE-FIGHTING MEASURES
Flash point	: not applicable
Flammable Limits Upper explosion limit Lower explosion limit Autoignition temperature Suitable extinguishing media Special Fire Fighting Procedures Unusual Fire/Explosion Hazards	 not applicable not applicable not applicable Carbon dioxide blanket, Water spray, Dry powder, Foam. Fullface self-contained breathing apparatus (SCBA) used in positive pressure mode should be worn to prevent inhalation of airborne contaminants. Carbon dioxide (CO2), carbon monoxide (CO), oxides of nitrogen (NOx), other hazardous materials, and smoke are all possible.
	6. ACCIDENTAL RELEASE MEASURES
Personal precautions	: Wear appropriate personal protection during cleanup, such as impervious gloves, boots and coveralls.
Environmental precautions	: Should not be released into the environment. The product should no be allowed to enter drains, water courses or the soil.
Methods for cleaning up	: Clean up promptly by sweeping or vacuum. Package all material in plastic, cardboard or metal containers for disposal. Refer to Section 13 of this MSDS for proper disposal methods.
	7. HANDLING AND STORAGE
Handling	: Take measures to prevent the build up of electrostatic charge. Heat



MATERIAL SAFETY DATA SHEET SILVER INK

ersion Number 1.0 evision Date 08/16/2012		Page 3 of Print Date <i>8/29/201</i>
Storege		only in areas with appropriate exhaust ventilation.
Storage	·	Keep containers dry and tightly closed to avoid moisture absorption and contamination. Keep in a dry, cool place.
8. EX	POSUI	RE CONTROLS/PERSONAL PROTECTION
Respiratory protection	:	No personal respiratory protective equipment normally required.
Eye/Face Protection	:	Safety glasses with side-shields
Hand protection	:	Protective gloves
Skin and body protection	:	Long sleeved clothing
Additional Protective Measures	:	Safety shoes
General Hygiene Considerations	:	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
Engineering measures	:	Heat only in areas with appropriate exhaust ventilation. Provide appropriate exhaust ventilation at machinery.

Exposure limit(s)

Components	Value	Exposure time	Exposure type	List:
Mica	3 mg/m3	Time Weighted Average	Respirable fraction.	ACGIH
		(TWA):		
	3 mg/m3	Recommended exposure	Respirable.	NIOSH
		limit (REL):		
	3 mg/m3	Time Weighted Average	Respirable dust.	OSHA Z1A
		(TWA):		
	3 mg/m3	Time Weighted Average		MX OEL
	_	(TWA):		
Titanium dioxide	10 mg/m3	Time Weighted Average		ACGIH
		(TWA):		
	15 mg/m3	PEL:	Total dust.	OSHA Z1
	10 mg/m3	Time Weighted Average	Total dust.	OSHA Z1A
	_	(TWA):		
	10 mg/m3	Time Weighted Average	as Ti	MX OEL
	U U	(TWA):		
	20 mg/m3	Short Term Exposure Limit	as Ti	MX OEL
	U U	(STEL):		

9. PHYSICAL AND CHEMICAL PROPERTIES

Form Appearance : solid : pellets Evaporation rate Specific Gravity Not applicableNot determined

MATERIAL SAFETY DATA SHEET SILVER INK

: GREY

: very faint

: insoluble

:

:

•

:

: Not determined

: not applicable

Stable

Will not occur.

Version Number 1.0 Revision Date 08/16/2012

Melting point/range

Hazardous Polymerization

Conditions to avoid

Incompatible Materials

Hazardous decomposition

Boiling Point:

Water solubility

Colour

Odour

Stability

products

 11. TOXICOLOGICAL INFORMATION

 This mixture has not been evaluated as a whole for health effects. Exposure effects listed are based on existing health data for the individual components which comprise the mixture.

10. STABILITY AND REACTIVITY

decomposition, do not overheat.

Toxicity Overview

This product contains the following components which in their pure form have the following characteristics:

CAS-No.	Chemical Name	Effect	Target Organ
13463-67-7	Titanium dioxide	Systemic effects	Respiratory system.
12001-26-2	Mica	Systemic effects	Respiratory system.

Carcinogenicity

This product contains the following components which, in their pure form, have the following carcinogenicity data:

CAS-No.	Chemical Name	OSHA	IARC	NTP
13463-67-7	Titanium dioxide	no	2B	no

IARC Carcinogen Classifications:

1 - The component is carcinogenic to humans.

2A - The component is probably carcinogenic to humans.

2B - The component is possibly carcinogenic to humans.

NTP Carcinogen Classifications:

1 - The component is known to be a human carcinogen.

2 - The component is reasonably anticipated to be a human carcinogen.

12. ECOLOGICAL INFORMATION

4/6

Pol	<u>vOne</u>

:

Bulk density

pН

Incompatible with strong acids and oxidizing agents.

Vapour pressure

Keep away from oxidizing agents and open flame. To avoid thermal

: Carbon dioxide (CO2), carbon monoxide (CO), oxides of nitrogen

(NOx), other hazardous materials, and smoke are all possible.

Vapour density

Page 4 of 6

Print Date 8/29/2012

Not established

not applicable

: not applicable

: not applicable



MATERIAL SAFETY DATA SHEET SILVER INK

sion Number 1.0 ision Date 08/16/2012	Page 5 Print Date 8/29/2
Persistence and degradability	: Not readily biodegradable.
Environmental Toxicity	: Chemicals are not readily available as they are bound within the polymer matrix.
Bioaccumulation Potential	: Chemicals are not readily available as they are bound within the polymer matrix.
Additional advice	: no data available
	13. DISPOSAL CONSIDERATIONS
Product	: Like most thermoplastic plastics the product can be recycled. Where possible recycling is preferred to disposal or incineration. The generator of waste material has the responsibility for proper waste classification, transportation and disposal in accordance with applicable federal, state/provincial and local regulations.
Contaminated packaging	: Recycling is preferred when possible. The generator of waste material has the responsibility for proper waste classification, transportation and disposal in accordance with applicable federal, state/provincial and local regulations.
	14. TRANSPORT INFORMATION
U.S. DOT Classification	: Not regulated for transportation.
ICAO/IATA	: Refer to specific regulation.
IMO/IMDG (maritime)	: Refer to specific regulation.
	15. REGULATORY INFORMATION
US Regulations:	
OSHA Status	: Classified as hazardous based on components.
TSCA Status	: All components of this product are listed on or exempt from the TSCA Inventory.
US. EPA CERCLA Hazardous	Substances (40 CFR 302)
not applicable	
California Proposition 65	: Not applicable

PolyOne.

MATERIAL SAFETY DATA SHEET **SILVER INK**

Version Number 1.0 Revision Date 08/16/2012

Page 6 of 6 Print Date 8/29/2012

SARA Title III Section 302 Extremely Hazardous Substance					
Unless specific chemicals are identified under this section, this product is Not Applicable under this regulation					
SARA Title III Section 313 Toxic Chemicals:					
Unless specific chemicals are identified under this section, this product is Not Applicable under this regulation					
Canadian Regulations:					
National Pollutant Release Inventory (NPRI)					
not applicable					
WHMIS Classification : D2A					
WHMIS Ingredient Disclosure List					
CAS-No. 12001-26-2					
DSL : All components of this product are on the Canadian Domestic Substances List (DSL) or are exempt.					
National Inventories:					
Australia AICS : Not determined					
China IECS : Listed					
Europe EINECS : Listed					
Japan ENCS : Not determined					
Korea KECI : Listed					
Philippines PICCS : Not determined					
 16. OTHER INFORMATION	t				

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.