

MATERIAL SAFETY DATA SHEET SILVER PP 716-1-3

Version Number 1.0 Revision Date 06/13/2003

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1. PRODUCT AND COMPANY IDENTIFICATION

POLYONE CORPORATION 33587 Walker Road, Avon Lake, OH 44012

| NON-EMERGENCY TELEPHONE | : | Product Stewardship (770) 271-5902 |
|-------------------------------|---|------------------------------------------------------------------------------|
| Emergency telephone number | : | CHEMTREC 1-800-424-9300 (24hrs for spill, leak, fire, exposure or accident). |
| Product name | : | SILVER PP 716-1-3 |
| Product code | : | CC10037811 |
| Chemical Name | : | Mixture |
| CAS-No. | : | Mixture |
| Product Use | : | Industrial Applications |

2. COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

| Components | CAS-No. | Weight % |
|--------------------------------|------------|----------|
| Carbon black | 1333-86-4 | 0.1 - 1 |
| Rutile, antimony chromium buff | 68186-90-3 | 1 - 5 |
| Titanium dioxide | 13463-67-7 | 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

| Routes of Exposure: | : Inhalation, Ingestion, Skin contact |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Acute exposure | |
| Inhalation Ingestion Eyes Skin | 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. |
| Chronic exposure | : Refer to Section 11 for Toxicological Information. |



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| 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 of 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 at least 15 minutes. If eye irritation persists, seek medical attention. |
| Skin | : Wash off with soap and plenty of water. If skin irritation persists seel 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 | Not applicable Not applicable Not relevant 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 |
| Unusual Fire/Explosion Hazards | contaminants.None |
| | 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 not 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 |



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| Storage | : | only in areas with appropriate exhaust ventilation. Keep containers dry and tightly closed to avoid moisture absorption and contamination. Keep in a dry, cool place. |
| 8. EXPOS | UF | 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: |
|------------------|-----------|-----------------------|-----------------------|---------|
| Carbon black | 3.5 mg/m3 | Time Weighted Average | Total dust. as carbon | ACGIH |
| | | (TWA): | black | |
| Carbon black | 3.5 mg/m3 | PEL: | Total dust. as carbon | OSHA Z1 |
| | | | black | |
| Rutile, antimony | 1 mg/m3 | PEL: | as Cr | OSHA Z1 |
| chromium buff | | | | |
| Rutile, antimony | 0.5 mg/m3 | PEL: | as Sb | OSHA Z1 |
| chromium buff | | | | |
| Rutile, antimony | 0.5 mg/m3 | Time Weighted Average | as Cr | ACGIH |
| chromium buff | | (TWA): | | |
| Rutile, antimony | 0.5 mg/m3 | Time Weighted Average | as Sb | ACGIH |
| chromium buff | | (TWA): | | |
| Titanium dioxide | 10 mg/m3 | Time Weighted Average | | ACGIH |
| | | (TWA): | | |
| Titanium dioxide | 15 mg/m3 | PEL: | Total dust. | OSHA Z1 |

9. PHYSICAL AND CHEMICAL PROPERTIES

- Form Appearance Color Odor
- : Solid : Pellets : GREY : Very faint

Evaporation rate : Not applicable. Specific Gravity : Not determined Specific Gravity Bulk density Vapor pressure

: Not established

: Not applicable



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| Boiling Point: | : No | ot determined ot applicable soluble | Vapor density pH | | Not applicable Not applicable |
|----------------------------------|------|------------------------------------------------|-------------------------|-----|----------------------------------|
| | 1(|). STABILITY AND RE | CACTIVITY | | |
| Stability | : | Stable. | | | |
| Hazardous Polymerization | : | Will not occur. | | | |
| Conditions to avoid | : | Keep away from oxidizi decomposition, do not o | | me. | To avoid thermal |
| Incompatible Materials | : | Incompatible with stron | g acids and oxidizing a | gen | ts. |
| Hazardous decomposition products | : | Carbon dioxide (CO2), (NOx), other hazardous | · · · · | · | U |

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.

Toxicity Overview

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

| CAS-No. | Chemical Name | Effect | Target Organ |
|------------|-----------------------------------|------------------|---------------------------------|
| 1333-86-4 | Carbon black | Systemic effects | Eyes, Respiratory system. |
| 68186-90-3 | Rutile, antimony chromium buff | Irritant | Eyes, Skin, Respiratory system. |
| 13463-67-7 | Titanium dioxide | Systemic effects | Respiratory system. |

LC50 / LD50

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

| CAS-No. | Chemical Name | Route | Value | Species |
|-----------|---------------|-------------|---------------|---------|
| 1333-86-4 | Carbon black | Oral LD50 | >15,400 mg/kg | rat |
| | | Dermal LD50 | > 3 gm/kg | rabbit |

Carcinogenicity:

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

| CAS-No. | Chemical Name | OSHA | IARC | NTP |
|-----------|---------------|------|------|-----|
| 1333-86-4 | Carbon black | 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.

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NTP Carcinogen Classifications:

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

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

Additional Health Hazard Information:

Carbon black 1333-86-4 Carcinogenicity: Many inhalation toxicologists believe that the tumor response observed in the referenced rat studies is species specific and does not correlate to human exposure. However, the IARC evaluation in Monograph Volume 65, issued in April 1996 concluded that, "There is sufficient evidence in experimental animals for the carcinogenicity of carbon black". Based on this evaluation, along with their evaluation of inadequate evidence of carcinogenicity in humans, IARC's overall evaluation is that "Carbon Black is possibly carcinogenic to humans (Group 2B). Carbon Black has not been listed as a carcinogen by the National Toxicology Program (NTP) or the Occupational Safety and Health Administration (OSHA). The National Institute of Occupational Safety and Health (NIOSH) criteria document on carbon black recommends that only carbon black with PAH (polynuclear aromatic hydrocarbon) levels greater than 0.1% be considered suspect carcinogens.

Additional Health Hazard Information:

Rutile, antimony chromium buff 68186-90-3 Can cause eye irritation. Can cause skin irritation. Symptoms may include redness and burning of skin, and other skin damage. Additional symptoms of skin contact may include: antimony measles (a red, pimply rash).

| Persistence and degradability | : Not readily biodegradable. |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Environmental Toxicity | : Chemicals are not readily available as they are bound within the matri of the polymer. |
| Bioaccumulation Potential | : Chemicals are not readily available as they are bound within the matri of the polymer. |
| Additional advice | : No data available. |
| | 13. DISPOSAL CONSIDERATIONS |
| Product | : Like most thermoplastics 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 materia has the responsibility for proper waste classification, transportation and disposal in accordance with applicable federal, state/provincial and local regulations. |
| | 14. TRANSPORT INFORMATION |



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| | | | | | | | | |
| | U.S. DOT Classification | : | Refer to specific regulation | on. | | | | |
| | ICAO/IATA | : | Refer to specific regulation | on. | | | | |
| | IMO / IMDG | : | Refer to specific regulation | on. | | | | |
| | 15. REGULATORY INFORMATION | | | | | | | |
| | US Regulations: | | | | | | | |
| OSHA Status : Classified as hazardous based on components. | | | | | nts. | | | |
| | TSCA Status : All components of this product are listed on or exempt fr Inventory. | | | | n or exempt from | the TSCA | | |
| | US. EPA CERCLA Hazardous Substances (40 CFR 302) | | | | | | | |
| | Not applicable | | | | | | | |
| | | | | | | | | |
| | California Proposition : This product does not contain a substance listed by California Prop 65. 65 SARA Title III Section 302 Extremely Hazardous Substance | | | | | | | |
| | Not applicable | | | | | | | |
| | SARA Title III Section 313 Toxic Chemicals: | | | | | | | |
| | Chemical Name | Chemical Name | | | Weight % | | | |
| | CHROMIUM III COM COMPOUNDS | POU | NDSANTIMONY | 68186-90-3 | 1.17 | | | |
| | Canadian Regulations: | | | | | | | |
| | | | | | | | | |
| | WHMIS Classification : D2A | | | | | | | |
| | WHMIS Ingredient Disclosure List | | | | | | | |
| | CAS-No. 68186-90-3 | | | | | | | |
| | DSL | All components of this p Substances List (DSL) o | | Canadian Domest | ic | | | |
| | National Inventories: | | | | | | | |

ional inventories.

Australia AICS : Listed.



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| China IECS | : Listed. |
|-------------------|-------------------|
| Europe EINECS | : Not determined. |
| Japan ENCS | : Not determined. |
| Korea KECI | : Not determined. |
| Philippines PICCS | : Not determined. |
| | |

16. OTHER INFORMATION

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.