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## MATERIAL SAFETY DATA SHEET BURNISH SILVER

Version Number 1.0 Revision Date 12/18/2009

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#### 1. PRODUCT AND COMPANY IDENTIFICATION

#### POLYONE CORPORATION 33587 Walker Road, Avon Lake, OH 44012

| Telephone<br>Emergency telephone | : | Product Stewardship (770) 271-5902<br>CHEMTREC 1-800-424-9300 (24hrs for spill, leak, fire, exposure<br>or accident). |
|----------------------------------|---|---|
| Product name                     | : | BURNISH SILVER  |
| Product code                     | : | CC10127746  |
| Chemical Name                    | : | Mixture   |
| CAS-No.                          | : | Mixture   |
| Product Use                      | : | Industrial Applications   |

#### 2. COMPOSITION/INFORMATION ON REGULATED INGREDIENTS

| Components                     | CAS-No.    | Weight percent |
|--------------------------------|------------|----------------|
| Carbon black                   | 1333-86-4  | 1 - 5          |
| Iron oxide                     | 1309-37-1  | 1 - 5          |
| Rutile, antimony chromium buff | 68186-90-3 | 5 - 10         |
| 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          | : Resin particles, like other inert materials, can be mechanically irritating.      |
| Ingestion           | : May be harmful if swallowed.  |
| Eyes                | : Resin particles, like other inert materials, are mechanically irritating to eyes. |
| Skin                | : Experience shows no unusual dermatitis hazard from routine handling.              |

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| Madical Conditions   |             |   |
|--|-------------|---|
| Medical Conditions<br>Aggravated by Exposure:  | :           | None known.   |
|  |             | 4. FIRST AID MEASURES   |
| Inhalation   | :           | Move to fresh air in case of accidental inhalation of fumes from<br>overheating or combustion. When symptoms persist or in all cases of<br>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 seek medical attention.   |
|  |             | 5. FIRE-FIGHTING MEASURES   |
| Flash point  | :           | not applicable  |
| Flammable Limits<br>Upper explosion limit<br>Lower explosion limit<br>Autoignition temperature<br>Suitable extinguishing media | :<br>:<br>: | not applicable<br>not applicable<br>not applicable<br>Carbon dioxide blanket, Water spray, Dry powder, Foam.  |
| Special Fire Fighting<br>Procedures<br>Unusual Fire/Explosion<br>Hazards   | :           | Fullface self-contained breathing apparatus (SCBA) used in positive<br>pressure mode should be worn to prevent inhalation of airborne<br>contaminants.<br>Carbon dioxide (CO2), carbon monoxide (CO), oxides of nitrogen<br>(NOx), other hazardous materials, and smoke are all possible. |
|  | 6. A        | CCIDENTAL 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<br>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.   |

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| Handling                          | :    | Take measures to prevent the build up of electrostatic charge. Heat only in areas with appropriate exhaust ventilation.    |
|-----------------------------------|------|--|
| Storage                           | :    | Keep containers dry and tightly closed to avoid moisture absorption<br>and contamination. Keep in a dry, cool place.       |
| 8. EX                             | POSU | 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<br>Measures | :    | Safety shoes   |
| General Hygiene<br>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.             |

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| Components                     | Value     | Exposure time                        | Exposure type        | List:    |
|--------------------------------|-----------|--------------------------------------|----------------------|----------|
| Carbon black                   | 3.5 mg/m3 | Time Weighted Average (TWA):         |                      | ACGIH    |
|                                | 3.5 mg/m3 | Recommended exposure limit (REL):    |                      | NIOSH    |
|                                | 0.1 mg/m3 | Recommended exposure limit (REL):    |                      | NIOSH    |
|                                | 3.5 mg/m3 | PEL:                                 |                      | OSHA Z1  |
|                                | 3.5 mg/m3 | Time Weighted Average (TWA):         |                      | OSHA Z1A |
|                                | 3.5 mg/m3 | Time Weighted Average (TWA):         |                      | MX OEL   |
|                                | 7 mg/m3   | Short Term Exposure Limit (STEL):    |                      | MX OEL   |
| Iron oxide                     | 5 mg/m3   | Time Weighted Average (TWA):         | Respirable fraction. | ACGIH    |
|                                | 10 mg/m3  | PEL:                                 | Fume.                | OSHA Z1  |
|                                | 5 mg/m3   | Time Weighted Average (TWA):         | as Fe                | MX OEL   |
|                                | 10 mg/m3  | Short Term Exposure Limit (STEL):    | as Fe                | MX OEL   |
| Rutile, antimony chromium buff | 0.5 mg/m3 | Recommended exposure limit (REL):    | as Cr                | NIOSH    |
|                                | 0.5 mg/m3 | PEL:                                 | as Cr                | OSHA Z1  |
|                                | 0.5 mg/m3 | Time Weighted Average (TWA):         | as Sb                | ACGIH    |
|                                | 0.5 mg/m3 | Recommended exposure<br>limit (REL): | as Sb                | NIOSH    |
|                                | 0.5 mg/m3 | PEL:                                 | as Sb                | OSHA Z1  |
|                                | 0.5 mg/m3 | Time Weighted Average (TWA):         | as Sb                | OSHA Z1A |
|                                | 0.5 mg/m3 | Time Weighted Average (TWA):         | as Sb                | MX OEL   |
| Titanium dioxide               | 10 mg/m3  | Time Weighted Average (TWA):         |                      | ACGIH    |
|                                | 15 mg/m3  | PEL:                                 | Total dust.          | OSHA Z1  |
|                                | 10 mg/m3  | Time Weighted Average<br>(TWA):      | Total dust.          | OSHA Z1A |
|                                | 10 mg/m3  | Time Weighted Average<br>(TWA):      | as Ti                | MX OEL   |
|                                | 20 mg/m3  | Short Term Exposure Limit<br>(STEL): | as Ti                | MX OEL   |

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

Form Appearance Colour Odour : solid: pellets: GREY: very faint

Evaporation rate Specific Gravity Bulk density Vapour pressure Not applicableNot determinedNot establishednot applicable

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| Melting point/range                            | : Not determined | Vapour density |
| Boiling Point <sup>.</sup>                     | • not applicable | nH             |

| Boiling Point:<br>Water solubility | : r | not applicable                                | pH                    | : not applicable      |  |
|------------------------------------|-----|---|-----------------------|-----------------------|--|
|                                    | 1   | IO. STABILITY AND RE                          | EACTIVITY             |                       |  |
| Stability                          | :   | Stable  |                       |                       |  |
| Hazardous Polymerization           | :   | Will not occur.                               |                       |                       |  |
| Conditions to avoid                | :   | Keep away from oxidiz decomposition, do not o | 00                    | ame. To avoid thermal |  |
| Incompatible Materials             | :   | Incompatible with stron                       | g acids and oxidizing | agents.               |  |
| Hazardous decomposition products   | :   | Carbon dioxide (CO2), (NOx), other hazardous  |                       | 6                     |  |

#### 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. |
| 1309-37-1  | Iron oxide       | Systemic effects | Respiratory system.       |
| 68186-90-3 | Rutile, antimony | Irritant         | Eyes, Skin, Respiratory   |
|            | chromium buff    |                  | 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 |
|------------|------------------|------|------|-----|
| 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.



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: not applicable

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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.

#### 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). The IARC 2B listing only pertains to airborne, unbound carbon black particles of respirable size. 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.

|                                   | 12. ECOLOGICAL INFORMATION  |
|-----------------------------------|---|
| 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<br>Contaminated packaging | <ul> <li>Like most thermoplastic plastics the product can be recycled. When 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.</li> <li>Recycling is preferred when possible. The generator of waste material has the responsibility for proper waste classification,</li> </ul> |
|                                   | transportation and disposal in accordance with applicable federal, state/provincial and local regulations.  |
|                                   | 14. TRANSPORT INFORMATION   |
| U.S. DOT Classification           | : Not regulated for transportation.   |
|                                   | : Refer to specific regulation.   |

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| 15. REGULATORY INFORMATION  |   |   |  |   |                               |                                  |          |  |
|---|---|---|--|---|-------------------------------|----------------------------------|----------|--|
| US Regulations:   |   |   |  |   |                               |                                  |          |  |
| US Regulations:   |   |   |  |   |                               |                                  |          |  |
| OSHA Status   | : Class   | sified as haza  | rdous based on   | componer  | nts.                          |                                  |          |  |
| TSCA Status   | : All components of this product are listed on or exempt from the TSCA Inventory. |   |  |   |                               |                                  |          |  |
| US. EPA CERCLA Hazardous  | Substances  | s (40 CFR 30  | 2)   |   |                               |                                  |          |  |
| not applicable  |   |   |  |   |                               |                                  |          |  |
| California Proposition<br>65  | : Not a   | applicable  |  |   |                               |                                  |          |  |
|   | -   |   |  | ct is Not A   | oplicable                     | under this                       | s regula |  |
| SARA Title III Section 302 Ex<br>Unless specific chemicals are id<br>SARA Title III Section 313 To  | dentified un  | nder this secti   |  | ct is Not Aj  | pplicable                     | under this                       | s regula |  |
| Unless specific chemicals are id<br>SARA Title III Section 313 To:  | dentified un  | nder this secti<br>cals:  | ion, this produc   |   | -                             |                                  |          |  |
| Unless specific chemicals are in<br>SARA Title III Section 313 To:<br>Unless specific chemicals are in  | dentified un  | nder this secti<br>cals:  | ion, this produc   | ct is Not Aj  | pplicable                     | under this                       |          |  |
| Unless specific chemicals are id<br>SARA Title III Section 313 To<br>Unless specific chemicals are id<br>Chemical Name<br>CHROMIUM III COMPOUN  | dentified un<br>xic Chemic<br>dentified un  | nder this secti<br>cals:<br>nder this secti                           | ion, this produc   | ct is Not A<br>No.  | pplicable                     | under this<br>t percent          |          |  |
| Unless specific chemicals are in<br>SARA Title III Section 313 To:<br>Unless specific chemicals are in<br>Chemical Name   | dentified un<br>xic Chemic<br>dentified un  | nder this secti<br>cals:<br>nder this secti                           | ion, this production, this production, this production (CAS-                   | ct is Not A<br>No.  | pplicable<br>Weight           | under this<br>t percent          |          |  |
| Unless specific chemicals are in<br>SARA Title III Section 313 To:<br>Unless specific chemicals are in<br>Chemical Name<br>CHROMIUM III COMPOUN<br>COMPOUNDSANTIMONY  | dentified un<br>xic Chemic<br>dentified un  | nder this secti<br>cals:<br>nder this secti                           | ion, this production, this production, this production (CAS-                   | ct is Not A<br>No.  | pplicable<br>Weight           | under this<br>t percent          |          |  |
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| Unless specific chemicals are in<br>SARA Title III Section 313 To:<br>Unless specific chemicals are in<br>Chemical Name<br>CHROMIUM III COMPOUN<br>COMPOUNDSANTIMONY<br>Canadian Regulations:<br>National Pollutant Relea   | dentified un<br>xic Chemic<br>dentified un<br>NDSCHRC<br>COMPOU                   | nder this secti<br>cals:<br>nder this secti<br>DMIUM III<br>JNDS      | ion, this produc<br>ion, this produc<br>CAS-<br>68186-                         | ct is Not Aj<br>No.<br>-90-3                              | pplicable<br>Weight<br>5.00 - | under this<br>t percent<br>10.00 | s regula |  |
| Unless specific chemicals are in<br>SARA Title III Section 313 To:<br>Unless specific chemicals are in<br>Chemical Name<br>CHROMIUM III COMPOUN<br>COMPOUNDSANTIMONY<br>Canadian Regulations:   | dentified un<br>xic Chemic<br>dentified un<br>NDSCHRC<br>COMPOU                   | nder this secti<br>cals:<br>nder this secti<br>DMIUM III<br>JNDS      | ion, this production, this production, this production (CAS-                   | ct is Not A<br>No.  | pplicable<br>Weight<br>5.00 - | under this<br>t percent          | s regula |  |
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| 1333-86-4<br>1309-37-1 |   |  |
|------------------------|---|--|
| 68186-90-3<br>DSL      | : | All components of this product are on the Canadian Domestic Substances List (DSL) or are exempt. |
| National Inventories:  |   |  |
| Australia AICS         | : | Listed   |
| China IECS             | : | Listed   |
| Europe EINECS          | : | Listed   |
| Japan ENCS             | : | Not determined   |
| Korea KECI             | : | Listed   |
| Philippines PICCS      | : | Listed   |
|                        |   | 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.