

POLYONE CORPORATION

MATERIAL SAFETY DATA SHEET

GRAPHITE

Version Number 1.0
 Revision Date 10/11/2012

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1. PRODUCT AND COMPANY IDENTIFICATION

POLYONE CORPORATION
 33587 Walker Road, Avon Lake, OH 44012

Telephone : 1 (440) 930-1000 or 1 (866) POLYONE
 Emergency telephone : **CHEMTREC 1-800-424-9300 (24hrs for spill, leak, fire, exposure number or accident).**

Product name : GRAPHITE
 Product code : CC10170729
 Chemical Name : Mixture
 CAS-No. : Mixture
 Product Use : Industrial Applications

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight percent
1,3,5-Triazine-2,4,6-triamine,N,N"-1,2-ethanediybis[N-[3-[[4,6-bis[butyl(1,2,2,6,6-pentamethyl-4-piperidiny)amino]-1,3,5-triazin	106990-43-6	1 - 5
Phenol, 2-(2H-benzotriazol-2-yl)-4,6-bis(1,1-dimethylpropyl)-	25973-55-1	1 - 5
Ethyl benzene	100-41-4	0.1 - 1
Carbon black	1333-86-4	1 - 5
Iron oxide	1309-37-1	1 - 5
Silica, amorphous	7631-86-9	1 - 5
Xylenes (o-, m-, p- isomers)	1330-20-7	1 - 5
Titanium dioxide	13463-67-7	30 - 60

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

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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.

Chronic exposure : Refer to Section 11 for Toxicological Information.

Medical Conditions : None known.

Aggravated by Exposure:

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 seek medical attention.

5. FIREFIGHTING MEASURES

- Flash point : not applicable
- Flammable Limits
 - Upper explosion limit : not applicable
 - Lower explosion limit : not applicable
- Auto-ignition temperature : not applicable
- Suitable extinguishing media : Carbon dioxide blanket, Water spray, Dry powder, Foam.
- Special Fire Fighting Procedures : Fullface self-contained breathing apparatus (SCBA) used in positive pressure mode should be worn to prevent inhalation of airborne contaminants.
- Unusual Fire/Explosion Hazards : Carbon dioxide (CO₂), carbon monoxide (CO), oxides of nitrogen (NO_x), 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.

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- 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.

7. HANDLING AND STORAGE

- 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 and contamination. Keep in a dry, cool place.

8. EXPOSURE 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)

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Components	Value	Exposure time	Exposure type	List:
Carbon black	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
	3 mg/m3	Time Weighted Average (TWA):	Inhalable fraction.	ACGIH
Ethyl benzene	20 ppm	Time Weighted Average (TWA):		ACGIH
	100 ppm 435 mg/m3	Recommended exposure limit (REL):		NIOSH
	125 ppm 545 mg/m3	Short Term Exposure Limit (STEL):		NIOSH
	100 ppm 435 mg/m3	PEL:		OSHA Z1
	100 ppm 435 mg/m3	Time Weighted Average (TWA):		OSHA Z1A
	125 ppm 545 mg/m3	Short Term Exposure Limit (STEL):		OSHA Z1A
	100 ppm 435 mg/m3	Time Weighted Average (TWA):		MX OEL
Iron oxide	125 ppm 545 mg/m3	Short Term Exposure Limit (STEL):		MX OEL
	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
Silica, amorphous	5 mg/m3	Time Weighted Average (TWA):	Respirable fraction.	ACGIH
	6 mg/m3	Recommended exposure limit (REL):		NIOSH
	0.8 mg/m3	Time Weighted Average (TWA):		Z3
	10 mg/m3	Time Weighted Average (TWA):	Inhalable particulate.	MX OEL
Titanium dioxide	3 mg/m3	Time Weighted Average (TWA):	Respirable dust.	MX OEL
	10 mg/m3	Time Weighted Average (TWA):		ACGIH
	15 mg/m3	PEL:	Total dust.	OSHA Z1

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	10 mg/m3	Time Weighted Average (TWA):	Total dust.	OSHA Z1A
	10 mg/m3	Time Weighted Average (TWA):	as Ti	MX OEL
	20 mg/m3	Short Term Exposure Limit (STEL):	as Ti	MX OEL
Xylenes (o-, m-, p-isomers)	100 ppm	Time Weighted Average (TWA):		ACGIH
	150 ppm	Short Term Exposure Limit (STEL):		ACGIH
	100 ppm 435 mg/m3	PEL:		OSHA Z1
	100 ppm 435 mg/m3	Time Weighted Average (TWA):		OSHA Z1A
	150 ppm 655 mg/m3	Short Term Exposure Limit (STEL):		OSHA Z1A
	100 ppm 435 mg/m3	Time Weighted Average (TWA):		MX OEL
	150 ppm 655 mg/m3	Short Term Exposure Limit (STEL):		MX OEL

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	: solid	Evaporation rate	: Not applicable
Appearance	: pellets	Specific Gravity	: Not determined
Colour	: GREY	Bulk density	: Not established
Odour	: very faint	Vapour pressure	: not applicable
Melting point/range	: Not determined	Vapour density	: not applicable
Boiling Point:	: not applicable	pH	: not applicable
Water solubility	: insoluble		

10. STABILITY AND REACTIVITY

Stability	: The product is stable if stored and handled as prescribed.
Hazardous Polymerization	: Will not occur.
Conditions to avoid	: Keep away from oxidizing agents and open flame. To avoid thermal decomposition, do not overheat.
Incompatible Materials	: Incompatible with strong acids and oxidizing agents.
Hazardous decomposition products	: Carbon dioxide (CO ₂), carbon monoxide (CO), oxides of nitrogen (NO _x), other hazardous materials, and smoke are all possible.

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.

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Toxicity Overview

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

CAS-No.	Chemical Name	Effect	Target Organ
25973-55-1	Phenol, 2-(2H-benzotriazol-2-yl)-4,6-bis(1,1-dimethylpropyl)-	Systemic effects	Kidney, Liver, reproductive system.
100-41-4	Ethyl benzene	Irritant	Eyes, Skin, Respiratory system.
		Systemic effects	Eyes, Skin, Respiratory system, central nervous system (CNS).
1333-86-4	Carbon black	Systemic effects	Eyes, Respiratory system.
1309-37-1	Iron oxide	Systemic effects	Respiratory system.
7631-86-9	Silica, amorphous	Irritant	Eyes, Respiratory system.
1330-20-7	Xylenes (o-, m-, p-isomers)	Irritant	Eyes, Respiratory system.
		Systemic effects	Eyes, Skin, Respiratory system, blood and blood forming system, Liver, Kidney, central nervous system (CNS), digestive 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
100-41-4	Ethyl benzene	Oral LD50 Dermal LD50	3,500 mg/kg 17800 ul/kg	rat rabbit
1333-86-4	Carbon black	Oral LD50 Dermal LD50	> 15,400 mg/kg > 3 gm/kg	rat rabbit
1330-20-7	Xylenes (o-, m-, p-isomers)	LC50 LC50 Oral LD50Oral LD50 Dermal LD50 Dermal LD50	5000 ppm/4H 4,300 mg/kg4,300 mg/kg > 1,700 mg/kg 43 g/kg	rat rat rat rabbit 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
100-41-4	Ethyl benzene	no	2B	no
13463-67-7	Titanium dioxide	no	2B	no

IARC Carcinogen Classifications:

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- 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.

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 : 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.

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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)

Chemical Name	CAS-No.	RQ for component	RQ for Mixture/Product
Xylenes (o-, m-, p-isomers)	1330-20-7	100 lbs	2,273 LB

California Proposition 65 : Not applicable

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

Chemical Name	CAS-No.	Weight percent
ZINC COMPOUNDS	68187-51-9	1.00 - 5.00
XYLENE (MIXED ISOMERS)	1330-20-7	1.00 - 5.00

Canadian Regulations:

National Pollutant Release Inventory (NPRI)

Chemical Name	CAS-No.	Weight percent	NPRI ID#
Zinc ferrite brown spinel (C.I. Pigment Yellow 119)	68187-51-9	1.00 - 5.00	
Xylenes (o-, m-, p-isomers)	1330-20-7	1.00 - 5.00	

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WHMIS Classification : D2A

WHMIS Ingredient Disclosure List

CAS-No.
1333-86-4
100-41-4
1309-37-1
7631-86-9

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.