

POLYONE CORPORATION**MATERIAL SAFETY DATA SHEET****Bone Cap**Version Number 1.1
Revision Date 01/20/2004Page 1 of 7
Print Date 11/13/2011**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 : Bone Cap
Product code : CC10005754
Chemical Name : Mixture
CAS-No. : Mixture
Product Use : Industrial Applications

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %
Manganese antimony titanium brown rutile (C.I. Pigment Yellow 164)	68412-38-4	10 - 30
Chromium (III) oxide	1308-38-9	10 - 30
Rutile, antimony chromium buff	68186-90-3	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 : Particulates, like other inert materials can be mechanically irritating. Excessive inhalation of product vapors, especially during heating or processing, may be irritating to respiratory system.

Ingestion : May be harmful if swallowed.

Eyes : Particulates, like other inert materials can be mechanically irritating.

Skin : Experience shows no unusual dermatitis hazard from routine handling.

POLYONE CORPORATION**MATERIAL SAFETY DATA SHEET****Bone Cap**Version Number 1.1
Revision Date 01/20/2004Page 2 of 7
Print Date 11/13/2011**Chronic exposure** : Refer to Section 11 for Toxicological Information.**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 seek medical attention.

5. FIRE-FIGHTING MEASURES

- Flash point** : Not applicable
- Flammable Limits**
- Upper explosion limit : Not applicable
 - Lower explosion limit : Not applicable
- Autoignition temperature** : Not applicable
- Suitable extinguishing media** : Carbon dioxide blanket, water spray, dry powder, foamnone.
- 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. May emit Hydrogen Chloride (HCl) or Carbon Monoxide (CO) under fire conditions.

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.

POLYONE CORPORATION

MATERIAL SAFETY DATA SHEET

Bone Cap

Version Number 1.1
Revision Date 01/20/2004

Page 3 of 7
Print Date 11/13/2011

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)

POLYONE CORPORATION

MATERIAL SAFETY DATA SHEET

Bone Cap

Version Number 1.1
Revision Date 01/20/2004

Page 4 of 7
Print Date 11/13/2011

Components	Value	Exposure time	Exposure type	List:
Manganese antimony titanium brown rutile (C.I. Pigment Yellow 164)	5 mg/m ³	Ceiling Limit Value:	Dust. as Mn	OSHA Z1
	0.5 mg/m ³	PEL:	Dust. as Sb	OSHA Z1
	0.2 mg/m ³	Time Weighted Average (TWA):	as Mn	ACGIH
	0.5 mg/m ³	Time Weighted Average (TWA):	as Sb	ACGIH
Chromium (III) oxide	0.5 mg/m ³	Time Weighted Average (TWA):	as Cr	ACGIH
	1 mg/m ³	PEL:	as Cr	OSHA Z1
Rutile, antimony chromium buff	1 mg/m ³	PEL:		OSHA Z1
	0.5 mg/m ³	PEL:	as Sb	OSHA Z1
	0.5 mg/m ³	Time Weighted Average (TWA):	as Cr	ACGIH
	0.5 mg/m ³	Time Weighted Average (TWA):	as Sb	ACGIH

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	: Solid	Evaporation rate	: Not applicable
Appearance	: Pellets	Specific Gravity:	: Not determined
Color	: TAN	Bulk density	: Not established
Odor	: Very faint	Vapor 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	: Stable.
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	: Avoid contact with strong oxidizers. Also, avoid contact with acetal or acetal copolymers and with amine containing materials during processing. At processing conditions, these materials are mutually destructive and involve rapid degradation. Thoroughly purge and mechanically clean processing equipment to avoid even trace quantities of these materials from coming in contact with each other. Prevent cross contamination of feedstocks.
Hazardous decomposition products	: Carbon dioxide (CO ₂), carbon monoxide (CO), oxides of nitrogen (NO _x), hydrogen chloride (HCl), other hazardous materials, and

POLYONE CORPORATION

MATERIAL SAFETY DATA SHEET

Bone Cap

Version Number 1.1
Revision Date 01/20/2004

Page 5 of 7
Print Date 11/13/2011

smoke are all possible. Prolonged heating (approximately 30 minutes or more) above 392 °F (200 °C) or short term heating at 482 °F (250 °C) may result in product decomposition and evolution of carbon monoxide and hydrogen chloride.

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
68412-38-4	Manganese antimony titanium brown rutile (C.I. Pigment Yellow 164)	Irritant	Eyes, Skin.
1308-38-9	Chromium (III) oxide	Irritant	Eyes, Skin.
		sensitizer	Skin.
68186-90-3	Rutile, antimony chromium buff	Irritant	Eyes, Skin, Respiratory system.

Additional Health Hazard Information:

Chromium (III) oxide 1308-38-9 The bi and trivalent forms of chrome have a low order of acute toxicity but may cause skin sensitization and irritation to the eyes. No effects have been reported for chromium (III) oxide. Chromium (III) compounds are not considered carcinogenic in animals or humans.

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).

12. ECOLOGICAL INFORMATION

- Persistence and degradability : Not readily biodegradable.
- Environmental Toxicity : Chemicals are not readily available as they are bound within the matrix of the polymer.
- Bioaccumulation Potential : Chemicals are not readily available as they are bound within the matrix of the polymer.
- 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

POLYONE CORPORATION**MATERIAL SAFETY DATA SHEET****Bone Cap**Version Number 1.1
Revision Date 01/20/2004Page 6 of 7
Print Date 11/13/2011

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 (air) : 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 : WARNING! This product contains a chemical known to the State of California to cause cancer.

SARA Title III Section 302 Extremely Hazardous Substance

Not applicable

SARA Title III Section 313 Toxic Chemicals:

Chemical Name	CAS-No.	Weight %
MANGANESE COMPOUNDS ANTIMONY COMPOUNDS	68412-38-4	21.42
CHROMIUM III COMPOUNDS	68186-90-3	17.13
CHROMIUM III COMPOUNDS	1308-38-9	15.12

Canadian Regulations:

POLYONE CORPORATION**MATERIAL SAFETY DATA SHEET****Bone Cap**

Version Number 1.1

Revision Date 01/20/2004

Page 7 of 7

Print Date 11/13/2011

National Pollutant Release Inventory (NPRI)

Chemical Name	CAS-No.	Weight %	NPRI ID#
Manganese antimony titanium brown rutile (C.I. Pigment Yellow 164)	68412-38-4	21.42	147
Manganese antimony titanium brown rutile (C.I. Pigment Yellow 164)	68412-38-4	21.42	17
Chromium (III) oxide	1308-38-9	15.12	68
Rutile, antimony chromium buff	68186-90-3	17.13	68
Rutile, antimony chromium buff	68186-90-3	17.13	17

WHMIS Classification : D2B

WHMIS Ingredient Disclosure List

CAS-No.
68412-38-4
1308-38-9
68186-90-3

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 : Not determined

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 when used in combination with any other materials and/or in any particular process or processing conditions.