SAFETY DATA SHEET

X GT-15034-1D

Section 1. Identification

GHS product identifier	:	X GT-15034-1D
Chemical name	:	Mixture
CAS number	:	Mixture
Other means of identification	:	EM10037869
Product type	:	solid

Relevant identified uses of the substance or mixture and uses advised against

Product use	:	Industrial applications. Plastics.
Supplier's details	:	**POLYONE CORPORATION** 33587 Walker Road, Avon Lake, OH 44012 1 (440) 930-1000 or 1 (866) POLYONE
Emergency telephone number (with hours of operation)	:	CHEMTREC 1-800-424-9300 (24hrs for spill, leak, fire, exposure or accident).

Section 2. Hazards identification

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.After handling, always wash hands thoroughly with soap and water.

OSHA/HCS status	:	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
Classification of the substance or mixture	:	Not classified.

GHS label elements

Signal word	:	No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

General : Not applicable.
Prevention : Not applicable.
Response : Not applicable.
Storage : Not applicable.
Disposal : Not applicable.
Supplemental label elements : None known.
Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture
Chemical name : Mixture
Other means of identification : EM10037869

CAS number/other identifiers

Ingredient name	%	CAS number
Copper	75 - 90	7440-50-8
Tungsten	3 - 5	7440-33-7

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses.

Get medical attention if irritation occurs.

Inhalation	:	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
Skin contact	:	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Ingestion	:	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	:	No known significant effects or critical hazards.
Inhalation	:	No known significant effects or critical hazards.
Skin contact	:	No known significant effects or critical hazards.
Ingestion	:	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	:	No specific data.
Inhalation	:	No specific data.
Skin contact	:	No specific data.
Ingestion	:	No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	:	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	:	No specific treatment.
Protection of first-aiders	:	No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	:	In case of fire, use water spray (fog), foam, dry chemical or CO_2.
Unsuitable extinguishing media	:	None known.

Specific hazards arising from the chemical	:	Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
Hazardous thermal decomposition products	:	Decomposition products may include the following materials: metal oxide/oxides
Special protective actions for fire-fighters	:	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters	:	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	:	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
For emergency responders	:	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
Environmental precautions	:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up

Small spill	:	Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
Large spill	:	Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures	:	Put on appropriate personal protective equipment (see Section 8). Avoid release to the environment.
Advice on general occupational hygiene	:	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Conditions for safe storage, including any incompatibilities	:	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Copper	**OSHA PEL 1989 (1989-03-01) expressed as Cu** PEL: Permissible Exposure Level 0.1 mg/m3 Form: Fume **PEL: Permissible Exposure Level** 1 mg/m3 Form: Dusts and mists **OSHA PEL (1993-06-30)** PEL: Permissible Exposure Level 0.1 mg/m3 Form: Fume **PEL: Permissible Exposure Level** 1 mg/m3 Form: Dusts and mists **NIOSH REL (1994-06-01) expressed as Cu** Time Weighted Average (TWA) 1 mg/m3 Form: Dusts and mists **ACGIH TLV (1994-09-01)** TLV-TWA: Threshold Limit Value - Time weighted average PEL: Permissible Exposure Level 0.2 mg/m3 Form: Fume **ACGIH TLV (1994-09-01) expressed as Cu** TLV-TWA: Threshold Limit Value - Time weighted average PEL: Permissible Exposure Level 1 mg/m3 Form: Dusts and mists
Tungsten	**NIOSH REL (1994-06-01) expressed as W** Time Weighted Average (TWA) 5 mg/m3 **Short Term Exposure Limit value for a 15-minute reference period expressed in parts per million or in mg/m3.** 10 mg/m3

	ACGIH TLV (1994-09-01) expressed as W TLV-TWA: Threshold Limit Value - Time weighted average PEL: Permissible Exposure Level 5 mg/m3 **TLV-STEL: Threshold Limit Value - Short Time Exposure Level** 10 mg/m3

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state	:	solid [Pellets.]
Color	:	BLACK
Odor	:	Faint odor.
Odor threshold	:	Not available.
pH	:	Not available.
Melting point	:	Not available.
Boiling point	:	Not available.
Flash point	:	Not available.
Burning time	:	Not available.
Burning rate	:	Not available.
Evaporation rate	:	Not available.
Flammability (solid, gas)	:	Not available.
Lower and upper explosive (flammable) limits	:	**Lower:** Not available. **Upper:** Not available.
Vapor pressure	:	Not available.
Vapor density	:	Not available.
Relative density	:	Not available.
Solubility	:	Not available.
Solubility in water	:	insoluble in water.
Partition coefficient: n-octanol/water	:	Not available.
Auto-ignition temperature	:	Not available.
Decomposition temperature	:	Not available.
SADT	:	Not available.
Viscosity	:	**Dynamic:** Not available. **Kinematic:** Not available.

Section 10. Stability and reactivity

Reactivity	:	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	:	Stable under recommended storage and handling conditions (see Section 7).
Possibility of hazardous reactions	:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	:	Keep away from extreme heat and oxidizing agents.
Incompatible materials	:	Keep away from strong acids. Oxidizer.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 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.

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Copper				
	LD50 Oral	Rat	482 mg/kg	-
Tungsten				

Conclusion/Summary : Mixture.Not fully tested.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Tungsten	Eyes - Mild irritant	Rabbit		24 hrs	-
	Skin - Mild irritant	Rabbit		24 hrs	-

Conclusion/Summary
Skin : Mixture.Not fully tested.
Eyes : Mixture.Not fully tested.
Respiratory : Mixture.Not fully tested.

Sensitization

Conclusion/Summary
Skin : Mixture.Not fully tested.
Respiratory : Mixture.Not fully tested.

Mutagenicity

Conclusion/Summary : Mixture.Not fully tested.

Carcinogenicity

Conclusion/Summary : Mixture.Not fully tested.

Reproductive toxicity

Conclusion/Summary : Mixture.Not fully tested.

Teratogenicity

Conclusion/Summary : Mixture.Not fully tested.

Specific target organ toxicity (single exposure)
Not available.

Specific target organ toxicity (repeated exposure)
Not available.

Aspiration hazard
Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Potential chronic health effects

Conclusion/Summary	:	Mixture.Not fully tested.
General	:	No known significant effects or critical hazards.
Carcinogenicity	:	No known significant effects or critical hazards.
Mutagenicity	:	No known significant effects or critical hazards.
Teratogenicity	:	No known significant effects or critical hazards.
Developmental effects	:	No known significant effects or critical hazards.
Fertility effects	:	No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Copper			
	Acute LC50 16 µg/l Fresh water	Fish - Fish	96 h
	Acute LC50 9.4 µg/l Fresh water	Fish - Fish	96 h
	Acute LC50 10.3 µg/l Fresh water	Fish - Fish	96 h
	Acute LC50 7.56 µg/l Marine water	Fish - Fish	96 h
	Acute LC50 8.7 µg/l Fresh water	Fish - Fish	96 h
	Acute EC50 3.1 µg/l Fresh water	Aquatic invertebrates. Daphnia	48 h
	Acute EC50 2.1 µg/l Fresh water	Aquatic invertebrates. Daphnia	48 h
	Acute EC50 2.5 µg/l Fresh water	Aquatic invertebrates. Daphnia	48 h
	Acute EC50 3.2 µg/l Fresh water	Aquatic invertebrates. Daphnia	48 h
	Acute EC50 1.6 µg/l Fresh water	Aquatic invertebrates. Crustaceans	48 h
	Acute LC50 0.072 µg/l Marine water	Aquatic invertebrates. Crustaceans	48 h
	Acute EC50 1 µg/l Fresh water	Aquatic invertebrates.	48 h

		Crustaceans	
	Acute EC50 1.6 µg/l Fresh water	Aquatic invertebrates. Crustaceans	48 h
	Acute EC50 1.6 µg/l Fresh water	Aquatic invertebrates. Crustaceans	48 h
	Acute LC50 3.1 µg/l Fresh water	Aquatic invertebrates. Daphnia	48 h
	Acute EC50 18 µg/l Marine water	Aquatic plants - Algae	72 h
	Acute IC50 16 µg/l Fresh water	Aquatic plants - Algae	72 h
	Acute EC50 18 µg/l Fresh water	Aquatic plants - Algae	72 h
	Acute IC50 13 µg/l Fresh water	Aquatic plants - Algae	72 h
	Acute IC50 18 µg/l Marine water	Aquatic plants - Algae	72 h
	Acute EC50 1,100 µg/l Fresh water	Aquatic plants - Aquatic plants	96 h
	Acute IC50 5.4 mg/l Marine water	Aquatic plants - Aquatic plants	72 h
	Acute NOEC 2.5 µg/l Marine water	Aquatic plants - Algae	3 d
	Acute NOEC 3 µg/l Marine water	Aquatic plants - Algae	3 d
	Acute NOEC 3.2 µg/l Fresh water	Aquatic plants - Algae	3 d
	Acute NOEC 0.013 mg/l Marine water	Aquatic plants - Algae	4 d
	Acute NOEC 7 mg/l Fresh water	Aquatic plants - Aquatic plants	3 d
	Acute EC10 0.032 mg/l Marine water	Aquatic plants - Algae	4 d
	Chronic NOEC 1.7 µg/l Fresh water	Fish - Fish	28 d
	Chronic NOEC 0.8 µg/l Fresh water	Fish - Fish	42 d
	Chronic NOEC 1.2 µg/l Fresh water	Fish - Fish	42 d
	Chronic NOEC 0.8 µg/l Fresh water	Fish - Fish	42 d
	Chronic NOEC 0.8 µg/l Fresh water	Fish - Fish	42 d
	Chronic NOEC 30.3 µg/l Fresh water	Aquatic invertebrates. Daphnia	21 d
	Chronic NOEC 15 µg/l Fresh water	Aquatic invertebrates. Daphnia	21 d
	Chronic NOEC 2 µg/l Fresh water	Aquatic invertebrates. Daphnia	21 d
	Chronic NOEC 29.4 µg/l Fresh water	Aquatic invertebrates. Daphnia	21 d
	Chronic NOEC 31.8 µg/l Fresh water	Aquatic invertebrates. Daphnia	21 d

	Chronic NOEC 0.02 mg/l Fresh water	Aquatic invertebrates. Crustaceans	21 d
X GT-15034-1D			
Remarks - Acute - Aquatic invertebrates.:	Chemicals are not readily available as they are bound within the polymer matrix.		

Conclusion/Summary : Chemicals are not readily available as they are bound within the polymer matrix.

Persistence and degradability

Conclusion/Summary : Chemicals are not readily available as they are bound within the polymer matrix.

Conclusion/Summary : Chemicals are not readily available as they are bound within the polymer matrix.

Bioaccumulative potential

Mobility in soil

Soil/water partition coefficient (KOC) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

United States - RCRA Acute hazardous waste "P" List: Not listed

United States - RCRA Toxic hazardous waste "U" List: Not listed

Section 14. Transport information

U.S. DOT Classification	:	Not regulated for transportation.
ICAO/IATA	:	Not classified as dangerous good under transport regulations.
IMO/IMDG (maritime)	:	Not classified as dangerous good under transport regulations.

Section 15. Regulatory information

U.S. Federal regulations :

United States - TSCA 12(b) - Chemical export notification: None of the components are listed.
United States - TSCA 4(a) - Final Test Rules: Listed **C.I. Solvent Black 7**

United States - TSCA 4(a) - ITC Priority list: Not listed
United States - TSCA 4(a) - Proposed test rules: Not listed
United States - TSCA 4(f) - Priority risk review: Not listed
United States - TSCA 5(a)2 - Final significant new use rules: Not listed
United States - TSCA 5(a)2 - Proposed significant new use rules: Not listed
United States - TSCA 5(e) - Substances consent order: Not listed
United States - TSCA 6 - Final risk management: Not listed
United States - TSCA 6 - Proposed risk management: Not listed
United States - TSCA 8(a) - Chemical risk rules: Not listed
United States - TSCA 8(a) - Dioxin/Furane precusor: Not listed
United States - TSCA 8(a) - Chemical Data Reporting (CDR): Not determined
United States - TSCA 8(a) - Preliminary assessment report (PAIR): Listed **Tungsten**

United States - TSCA 8(c) - Significant adverse reaction (SAR): Not listed
United States - TSCA 8(d) - Health and safety studies: Not listed
United States - EPA Clean water act (CWA) section 307 - Priority pollutants: Listed **Copper**

United States - EPA Clean water act (CWA) section 311 - Hazardous substances: Listed
United States - EPA Clean air act (CAA) section 112 - Accidental release prevention - Flammable substances: Not listed
United States - EPA Clean air act (CAA) section 112 - Accidental release prevention - Toxic substances: Not listed

United States - Department of commerce - Precursor chemical:
Not listed

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)	:	Listed
Clean Air Act Section 602 Class I Substances	:	Not listed
Clean Air Act Section 602 Class II Substances	:	Not listed
DEA List I Chemicals (Precursor Chemicals)	:	Not listed
DEA List II Chemicals (Essential Chemicals)	:	Not listed

US. EPA CERCLA Hazardous Substances (40 CFR 302)

Chemical Name	CAS-No.	RQ for component
Copper	7440-50-8	5,000 lb(s) 2,270 kg

SARA 311/312

Classification : Not applicable.

Composition/information on ingredients

Name	%	Classification
Copper	75 - 90	AH
Tungsten	3 - 5	AH

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Copper	7440-50-8	75 - 90
Supplier notification	Copper	7440-50-8	75 - 90

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts	:	The following components are listed: Tungsten Copper
New York	:	The following components are listed: Copper
New Jersey	:	The following components are listed: Tungsten Copper
Pennsylvania	:	The following components are listed: Tungsten Copper

California Prop. 65

This PolyOne product does not contain any chemical known to the State of California to cause cancer, or birth defects or other reproductive harm, in concentrations that require a warning notice under California's Proposition 65. This statement relies in part on information provided by the buyer of this PolyOne product. PolyOne does not control or have complete knowledge of the end uses to which that buyer or any other entity in the chain of distribution and marketing may put this PolyOne product. Therefore, the buyer of this PolyOne product, each entity that uses this PolyOne product in formulating another product, and each entity in the chain of distribution and marketing of any product that includes the material in this PolyOne product must make its own decision as to giving a Proposition 65 warning.

United States inventory (TSCA 8b)	:	All components are listed or exempted.
Canada inventory	:	All components are listed or exempted.

International regulations

International lists	:	**Australia inventory (AICS):** Not determined. **Taiwan inventory (CSNN):** All components are listed or exempted. **Malaysia Inventory (EHS Register):** Not determined. **EINECS:** All components are listed or exempted. **Japan inventory:** Not determined. **China inventory (IECSC):** All components are listed or exempted. **Korea inventory:** All components are listed or exempted. **New Zealand Inventory of Chemicals (NZIoC):** All components are listed or exempted. **Philippines inventory (PICCS):** All components are listed or exempted.
Chemical Weapons Convention List Schedule I Chemicals	:	Not listed
Chemical Weapons Convention List Schedule II Chemicals	:	Not listed
Chemical Weapons Convention List Schedule III Chemicals	:	Not listed

Section 16. Other information

History

Date of printing	:	03/10/2016
Date of issue/Date of revision	:	03/09/2016
Date of previous issue	:	00/00/0000
Version	:	1.0
Key to abbreviations	:	ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United Nations
References	:	Not available.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist. Particularly this information may not be valid for such material used in conjunction with any other materials or in any process, unless specified in the text.