

Tungste-Met Inc Cemented Carbide with Cobalt Binder

Cemented Carbide

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

Revision Date: 10/21/2015

Date of issue: 10/21/2015

Version: 1.0

SECTION 1: IDENTIFICATION

1.1. Product Identifier

Product Form: Mixture

Product Name: Cemented Carbide

Synonyms: Coated Carbide and Cemented Carbide Tools

1.2. Intended Use of the Product For professional use only.

1.3. Name, Address, and Telephone of the Responsible Party

Company

Tungste-Met

843 Lochgelly Rd., Oak Hill, WV 25901

304-469-4721

Fax 304-469-4750

1.4. Emergency Telephone Number

Emergency Number : 304-469-4721

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

GHS-US classification

Not classified

2.2. Label Elements

GHS-US Labeling

No labeling applicable

2.3. Other Hazards

This product is physiologically inert in its massive form. However, if the product is altered, user-generated dust, fines, ribbons, powders, and/or fumes may pose a physiological hazard if inhaled or ingested. Avoid inhalation of metal dusts and fumes. May cause metal fume fever, an influenza-like illness. Avoid skin and eye contact with dusts to prevent mechanical irritation. Molten product may cause thermal burns. Welding may release hazardous fumes, take appropriate precautions. Welding fumes are a known human carcinogen. Small chips, fine turnings and dust from processing may be readily ignitable and difficult to extinguish, or generate explosive hydrogen gas and heat in contact with water. Metal dust, if dispersed in sufficient quantities and in the presence of an ignition source, is a combustible dust hazard. Repeated or prolonged contact with cobalt can cause skin irritation, sensitization, and some chronic effects. If grinding fluid is used to process this product see the grinding fluid SDS for its hazard information. Additional hazardous products may be formed during processing, see decomposition products in section 10, and see section 8 for exposure controls related to these products. This product contains substances that are hazardous to aquatic life. In massive form this product does not pose any environmental hazards, however if processed into shavings, fines, or powder/dust, this product may be very toxic to aquatic life with long lasting effects.

2.4. Unknown Acute Toxicity (GHS-US)

No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance

Not applicable

3.2. Mixture

Name	Product Identifier	%	GHS-US classification
Tungsten carbide	(CAS No) 12070-12-1	55 - 96	Not classified
Cobalt	(CAS No) 7440-48-4	<= 30	Comb. Dust Acute Tox. 4 (Oral), H302 Eye Irrit. 2A, H319 Resp. Sens. 1B, H334 Skin Sens. 1, H317 Carc. 1B, H350 Repr. 2, H361 Aquatic Chronic 1, H410
Tantalum carbide (TaC)	(CAS No) 12070-06-3	<= 20	Not classified
Titanium carbide (TiC)	(CAS No) 12070-08-5	<= 20	Not classified
Niobium carbide (NbC)	(CAS No) 12069-94-2	<= 20	Flam. Sol. 1, H228
Chromium	(CAS No) 7440-47-3	<= 5	Comb. Dust

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Full text of H-phrases: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of First Aid Measures

First-aid Measures General: Never give anything by mouth to an unconscious person. If exposed or concerned: Get medical advice/attention.

First-aid Measures After Inhalation: Remove to fresh air and keep at rest in a position comfortable for breathing. If exposed or concerned: Get medical advice/attention.

First-aid Measures After Skin Contact: Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Obtain medical attention if irritation develops or persists. In molten form: Cool skin rapidly with cold water after contact with molten product. Removal of solidified molten material from skin requires medical assistance.

First-aid Measures After Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if irritation develops or persists. In molten form: Removal of solidified molten material from the eyes requires medical assistance.

First-aid Measures After Ingestion: Do NOT induce vomiting. Rinse mouth. Immediately call a POISON CENTER or doctor/physician.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/Injuries: Under normal conditions of use not expected to present a significant hazard. Under milling, or physical alteration metal dusts may be produced that cause irritation of the respiratory tract, skin, and may be harmful. Molten material may release toxic, and irritating fumes. There are potential chronic health effects to consider.

Symptoms/Injuries After Inhalation: Dust particles generated during processing may cause irritation of the skin, eyes, and respiratory tract. During processing, the most significant route of exposure is by the inhalation (breathing) of fumes and dust. If fumes are inhaled, they can cause a condition commonly known as metal fume fever with symptoms which resemble influenza; Symptoms may be delayed 4-12 hours and begin with a sudden onset of thirst, and a sweet, metallic or foul taste in the mouth. Other symptoms may include upper respiratory tract irritation accompanied by coughing and a dryness of the mucous membranes, lassitude and a generalized feeling of malaise. Fever, chills, muscular pain, mild to severe headache, nausea, occasional vomiting, exaggerated mental activity, profuse sweating, excessive urination, diarrhea and prostration may also occur.

Symptoms/Injuries After Skin Contact: Contact with fumes or metal powder will irritate skin. Skin contact with large amounts of dust may cause mechanical irritation. Contact with hot, molten metal will cause thermal burns.

Symptoms/Injuries After Eye Contact: During metal processing, dusts caused from milling and physical alteration will likely cause eye irritation. Fumes from thermal decomposition or molten material will likely be irritating to the eyes. Mechanical damage via flying particles and chipped slag is possible. Risk of thermal burns on contact with molten product.

Symptoms/Injuries After Ingestion: Ingestion is not considered a potential route of exposure. Ingestion is likely to be harmful or have adverse effects.

Chronic Symptoms: Molten material may produce fumes that are toxic, or irritating, and may cause metal fume fever. When machined or physically altered material may produce dusts or ribbons that may be irritating or harmful. Repeated exposure to tantalum alloys may cause fibrosis, chronic rhinitis and "hard metal pneumoconiosis". Chromium: Certain hexavalent chromium compounds have been demonstrated to be carcinogenic on the basis of epidemiological investigations on workers and experimental studies in animals. Increased incidences of respiratory cancer have been found in chromium (VI) workers. There is an increased incidence of lung cancer in industrial workers exposed to chromium (VI) compounds. Please refer to IARC volume 23 for a more detailed discussion. Repeated or long term inhalation of cobalt may cause asthma, irritation of the lungs. Ingestion of dust containing cobalt may cause damage to the thyroid, spleen, circulatory system include the blood, and heart. Cobalt: If respirable, cobalt dust may be fatal if inhaled. Cobalt may cause cancer, and is suspected of damaging fertility or the unborn child.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If you feel unwell, seek medical advice (show the label where possible).

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Media: Dry sand. Earth. Class D Extinguishing Agent (for metal powder fires). Dry chemical (for oil or electric fires).

Unsuitable Extinguishing Media: If material is hot or in dust form, do not use a heavy water stream. Do not use water when molten material is involved, contact of hot product with water will result in a violent expansion as the water turns to steam causing explosion with massive force.

5.2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: The following applies to the product if it is cut, sanded or altered in such a way that excessive and/or significant particulates and/or dusts may be generated: Combustible Dust. Dust generated from processing may present a dust explosion hazard. Small chips, turnings, dust and fines from processing may be readily ignitable.

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Explosion Hazard: Product is not explosive, however in contact with incompatibilities may release explosive hydrogen gas.

Reactivity: Hazardous reactions will not occur under normal conditions.

5.3. Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Use firefighting measures appropriate for the surrounding fire. Do not breathe fumes from fires or vapors from decomposition. Do not allow run-off from firefighting to enter drains or water courses.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Other Information: Refer to Section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Avoid breathing (vapors, dust, fumes). Avoid generating dust. Do not handle until all safety precautions have been read and understood.

6.1.1. For Non-emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

6.1.2. For Emergency Responders

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.

6.2. Environmental Precautions

Prevent entry of dusts, chips and ribbon. to sewers and public waters. Notify authorities if any material enters sewers or public waters. Notify authorities if product enters sewers or public waters.

6.3. Methods and Material for Containment and Cleaning Up

For Containment: Contain and collect as any solid. Avoid generation of dust during clean-up of spills.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. If molten liquid is involved: allow liquid material to solidify before cleaning up. In solid/dust form: Vacuum clean-up is preferred. If sweeping is required use a dust suppressant. Vacuum must be fitted with HEPA filter to prevent release of particulates during clean-up. Carefully shovel or sweep up spilled material and place in suitable container. Contact competent authorities after a spill.

6.4. Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection. Concerning disposal elimination after cleaning, see item 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Additional Hazards When Processed: Avoid dust production. Dust generated from processing may present a dust explosion hazard. Chips, fines, and dust can react with water or incompatible materials forming explosive/flammable hydrogen gas. Molten material may react violently with water forming explosive or flammable reactions. A thermite reaction may also occur under certain conditions. This product contains components that are environmentally hazardous and small chips and dust from processing may be very toxic to aquatic life.

Precautions for Safe Handling: Do not handle until all safety precautions have been read and understood. Use appropriate personal protection equipment (PPE). Protect skin and eyes from contact with molten material.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Do not eat, drink or smoke when using this product.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations. Avoid creating or spreading dust.

Storage Conditions: Store in a dry, cool and well-ventilated place. Keep container closed when not in use. Store away from incompatible materials.

Incompatible Products: Strong acids. Strong bases. Strong oxidizers. Corrosive substances in prolonged contact with metals may produce flammable hydrogen gas. Water (when product is in dust/molten form). Halogens. Peroxides. Chlorates. Nitrates. Azides. Oils and lubricants - will deteriorate the strength of the product.

7.3. Specific End Use(s) For professional use only.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), or OSHA (PEL).

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Cobalt (7440-48-4)		
USA ACGIH	ACGIH TWA (mg/m ³)	0.02 mg/m ³
USA ACGIH	ACGIH chemical category	Confirmed Animal Carcinogen with Unknown Relevance to Humans
USA ACGIH	Biological Exposure Indices (BEI)	15 µg/l (Medium: urine - Time: end of shift at end of workweek - Parameter: Cobalt (nonspecific))
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	0.05 mg/m ³ (dust and fume)
USA IDLH	US IDLH (mg/m ³)	20 mg/m ³ (dust and fume)
USA OSHA	OSHA PEL (TWA) (mg/m ³)	0.1 mg/m ³ (dust and fume)
Chromium (7440-47-3)		
USA ACGIH	ACGIH TWA (mg/m ³)	0.5 mg/m ³
USA ACGIH	ACGIH chemical category	Not Classifiable as a Human Carcinogen
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	0.5 mg/m ³
USA IDLH	US IDLH (mg/m ³)	250 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	1 mg/m ³

8.2. Exposure Controls

Appropriate Engineering Controls

: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Avoid creating or spreading dust. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Ensure adequate ventilation, especially in confined areas. When dry sawing or grinding, use dustless systems for handling, storage, and clean up so that airborne dust does not exceed the PEL. Practice good housekeeping. Do not permit dust to collect on walls, floors, sills, ledges, machinery, or equipment. Maintain, clean, and fit test respirators in accordance with OSHA regulations. Maintain and test ventilation and dust collection equipment. Wash or vacuum clothing which has become dusty. Ensure all national/local regulations are observed.

Personal Protective Equipment

: Protective goggles. Gloves. Protective clothing. Insufficient ventilation: wear respiratory protection.



Materials for Protective Clothing

: Dust: Wear suitable protective clothing.

Hand Protection

: Wear chemically resistant protective gloves. If material is hot, wear thermally resistant protective gloves.

Eye Protection

: Chemical safety goggles.

Skin and Body Protection

: In case of dust production: dustproof clothing.

Respiratory Protection

: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. Use NIOSH-approved dust mask if dust has the potential to become airborne.

Environmental Exposure Controls

: Avoid release to the environment.

Consumer Exposure Controls

: Do not eat, drink or smoke during use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State	: Solid
Appearance	: Dark Gray
Odor	: No odor
Odor Threshold	: No data available
pH	: No data available
Evaporation Rate	: No data available
Melting Point	: No data available
Freezing Point	: No data available
Boiling Point	: No data available

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Flash Point	: No data available
Auto-ignition Temperature	: No data available
Decomposition Temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor Pressure	: No data available
Relative Vapor Density at 20 °C	: No data available
Relative Density	: No data available
Specific Gravity	: 12.0 - 15.5 (water=1)
Solubility	: No data available
Partition Coefficient: N-Octanol/Water	: No data available
Viscosity	: No data available

9.2. Other Information No additional information available

SECTION 10: STABILITY AND REACTIVITY

- 10.1. Reactivity:** Hazardous reactions will not occur under normal conditions.
- 10.2. Chemical Stability:** Stable under normal conditions.
- 10.3. Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.
- 10.4. Conditions to Avoid:** Incompatible materials. Avoid creating or spreading dust.
- 10.5. Incompatible Materials:** Strong acids. Strong bases. Strong oxidizers. Corrosive substances in prolonged contact with metals may produce flammable hydrogen gas. Water (when product is in dust/molten form). Halogens. Peroxides. Chlorates. Nitrates. Azides. Water. Oils and lubricants.
- 10.6. Hazardous Decomposition Products:** Thermal decomposition can lead to release of irritating gases and vapors. Metal oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information On Toxicological Effects

Acute Toxicity: Not classified

Cobalt (7440-48-4)	
LD50 Oral Rat	215.9 - 1140 mg/kg
LC50 Inhalation Rat	> 10 mg/l (Exposure time: 1 h)
ATE (Oral)	215.90 mg/kg body weight
Chromium (7440-47-3)	
LD50 Oral Rat	> 5000 mg/kg
LC50 Inhalation Rat	> 5.41 mg/l/4h

Skin Corrosion/Irritation: Not classified

Serious Eye Damage/Irritation: Not classified

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Carcinogenicity: Not classified

Cobalt (7440-48-4)	
IARC group	2B
National Toxicology Program (NTP) Status	Evidence of Carcinogenicity.
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.
Chromium (7440-47-3)	
IARC group	3

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): Not classified

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Aspiration Hazard: Not classified

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Symptoms/Injuries After Inhalation: Dust particles generated during processing may cause irritation of the skin, eyes, and respiratory tract. During processing, the most significant route of exposure is by the inhalation (breathing) of fumes and dust. If fumes are inhaled, they can cause a condition commonly known as metal fume fever with symptoms which resemble influenza; Symptoms may be delayed 4-12 hours and begin with a sudden onset of thirst, and a sweet, metallic or foul taste in the mouth. Other symptoms may include upper respiratory tract irritation accompanied by coughing and a dryness of the mucous membranes, lassitude and a generalized feeling of malaise. Fever, chills, muscular pain, mild to severe headache, nausea, occasional vomiting, exaggerated mental activity, profuse sweating, excessive urination, diarrhea and prostration may also occur.

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Symptoms/Injuries After Ingestion: Ingestion is not considered a potential route of exposure. Ingestion is likely to be harmful or have adverse effects.

Chronic Symptoms: Molten material may produce fumes that are toxic, or irritating, and may cause metal fume fever. When machined or physically altered material may produce dusts or ribbons that may be irritating or harmful. Repeated exposure to tantalum alloys may cause fibrosis, chronic rhinitis and "hard metal pneumoconiosis". Chromium: Certain hexavalent chromium compounds have been demonstrated to be carcinogenic on the basis of epidemiological investigations on workers and experimental studies in animals. Increased incidences of respiratory cancer have been found in chromium (VI) workers. There is an increased incidence of lung cancer in industrial workers exposed to chromium (VI) compounds. Please refer to IARC volume 23 for a more detailed discussion. Repeated or long term inhalation of cobalt may cause asthma, irritation of the lungs. Ingestion of dust containing cobalt may cause damage to the thyroid, spleen, circulatory system include the blood, and heart. Cobalt: If respirable, cobalt dust may be fatal if inhaled. Cobalt may cause cancer, and is suspected of damaging fertility or the unborn child.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecology - Water : This product in its massive form does not pose an ecotoxicity hazard. If product is altered and powder, dust, fines, shavings, small particles, ribbons, or molten form are generated this product may be considered very toxic to aquatic life with long lasting effects.

Cobalt (7440-48-4)	
LC50 Fish 1	> 100 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])

12.2. Persistence and Degradability No additional information available

12.3. Bioaccumulative Potential

Cobalt (7440-48-4)	
BCF fish 1	(no bioaccumulation)

12.4. Mobility in Soil No additional information available

12.5. Other Adverse Effects

Other Information : Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, and international regulations.

Additional Information: Reuse or recycle material whenever possible. If reuse or recycling is not possible, disposal must be made according to local or governmental regulations.

SECTION 14: TRANSPORT INFORMATION

14.1. In Accordance with DOT Not regulated for transport

14.2. In Accordance with IMDG Not regulated for transport

14.3. In Accordance with IATA Not regulated for transport

SECTION 15: REGULATORY INFORMATION

15.1 US Federal Regulations

Tungsten carbide (12070-12-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

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Tantalum carbide (TaC) (12070-06-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Titanium carbide (TiC) (12070-08-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Niobium carbide (NbC) (12069-94-2)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Cobalt (7440-48-4)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Subject to reporting requirements of United States SARA Section 313	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard
SARA Section 313 - Emission Reporting	0.1 %
Chromium (7440-47-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Subject to reporting requirements of United States SARA Section 313	
SARA Section 313 - Emission Reporting	1.0 %
15.2 US State Regulations	
Cobalt (7440-48-4)	
U.S. - California - Proposition 65 - Carcinogens List	WARNING: This product contains chemicals known to the State of California to cause cancer.
Tungsten carbide (12070-12-1)	
RTK - U.S. - New Jersey - Right to Know Hazardous Substance List	
Cobalt (7440-48-4)	
U.S. - California - SCAQMD - Toxic Air Contaminants With Proposed Risk Values U.S. - California - Toxic Air Contaminant List (AB 1807, AB 2728) U.S. - Connecticut - Hazardous Air Pollutants - HLVs (30 min) U.S. - Connecticut - Hazardous Air Pollutants - HLVs (8 hr) U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Emission Levels (ELs) U.S. - Idaho - Occupational Exposure Limits - TWAs U.S. - Illinois - Toxic Air Contaminant Carcinogens U.S. - Illinois - Toxic Air Contaminants U.S. - Maine - Air Pollutants - Hazardous Air Pollutants U.S. - Maine - Chemicals of High Concern U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 1 U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 2 U.S. - Massachusetts - Oil & Hazardous Material List - Reportable Quantity U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 1 U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 2 RTK - U.S. - Massachusetts - Right To Know List U.S. - Massachusetts - Toxics Use Reduction Act U.S. - Michigan - Occupational Exposure Limits - TWAs U.S. - Minnesota - Chemicals of High Concern U.S. - Minnesota - Hazardous Substance List U.S. - Minnesota - Permissible Exposure Limits - TWAs U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - 24-Hour U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - Annual U.S. - New Jersey - Discharge Prevention - List of Hazardous Substances U.S. - New Jersey - Environmental Hazardous Substances List RTK - U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - New Jersey - Special Health Hazards Substances List U.S. - New Mexico - Water Quality - Standards for Ground Water of 10,000 mg/L TDS Concentration or Less U.S. - New York - Occupational Exposure Limits - TWAs U.S. - North Dakota - Air Pollutants - Guideline Concentrations - 8-Hour U.S. - Oregon - Permissible Exposure Limits - TWAs	

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U.S. - California - Safer Consumer Products - Initial List of Candidate Chemicals and Chemical Groups
RTK - U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
RTK - U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - Annual
U.S. - Tennessee - Occupational Exposure Limits - TWAs
U.S. - Texas - Effects Screening Levels - Long Term
U.S. - Texas - Effects Screening Levels - Short Term
U.S. - Vermont - Permissible Exposure Limits - TWAs
U.S. - Washington - Permissible Exposure Limits - STELs
U.S. - Washington - Permissible Exposure Limits - TWAs
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 25 Feet to Less Than 40 Feet
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 40 Feet to Less Than 75 Feet
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 75 Feet or Greater
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights Less Than 25 Feet

Chromium (7440-47-3)

U.S. - California - Toxic Air Contaminant List (AB 1807, AB 2728)
U.S. - Colorado - Hazardous Wastes - Maximum Concentration for the Toxicity Characteristics
U.S. - Colorado - Primary Drinking Water Regulations - Maximum Contaminant Level Goals (MCLGs)
U.S. - Colorado - Primary Drinking Water Regulations - Maximum Contaminant Levels (MCLs)
U.S. - Connecticut - Drinking Water Quality Standards - Groundwater Sources
U.S. - Connecticut - Drinking Water Quality Standards - Maximum Contaminant Levels
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (30 min)
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (8 hr)
U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities
U.S. - Florida - Drinking Water Standards - Inorganic Contaminants - Maximum Contaminant Levels (MCLs)
U.S. - Georgia - Drinking Water - Maximum Contaminant Levels (MCLs)
U.S. - Idaho - Carcinogenic Toxic Air Pollutants - Emission Levels (ELs)
U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations
U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Emission Levels (ELs)
U.S. - Idaho - Occupational Exposure Limits - TWAs
U.S. - Illinois - Toxic Air Contaminants
U.S. - Louisiana - Reportable Quantity List for Pollutants
U.S. - Maine - Air Pollutants - Hazardous Air Pollutants
U.S. - Maryland - Surface Water Quality Standards - Consumption of Water and Organisms
U.S. - Massachusetts - Allowable Ambient Limits (AALs)
U.S. - Massachusetts - Allowable Threshold Concentrations (ATCs)
U.S. - Massachusetts - Drinking Water - Maximum Contaminant Levels (MCLs)
U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 1
U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 2
U.S. - Massachusetts - Oil & Hazardous Material List - Reportable Quantity
U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 1
U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 2
RTK - U.S. - Massachusetts - Right To Know List
U.S. - Massachusetts - Threshold Effects Exposure Limits (TELs)
U.S. - Massachusetts - Toxics Use Reduction Act
U.S. - Michigan - Occupational Exposure Limits - TWAs
U.S. - Michigan - Polluting Materials List
U.S. - Minnesota - Hazardous Substance List
U.S. - Minnesota - Permissible Exposure Limits - TWAs
U.S. - Missouri - Drinking Water - Maximum Contaminant Levels (MCLs)
U.S. - Nebraska - Drinking Water - Maximum Contaminant Levels (MCLs)
U.S. - Nebraska - Maximum Concentration of Contaminants for the Toxicity Characteristic
U.S. - New Hampshire - Drinking Water - Maximum Contaminant Levels (MCLs)
U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - 24-Hour
U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - Annual
U.S. - New Jersey - Discharge Prevention - List of Hazardous Substances
U.S. - New Jersey - Environmental Hazardous Substances List

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U.S. - New Jersey - Primary Drinking Water Standards - Maximum Contaminant Levels - MCLs
 RTK - U.S. - New Jersey - Right to Know Hazardous Substance List
 U.S. - New Jersey - Special Health Hazards Substances List
 U.S. - New Jersey - Water Quality - Ground Water Quality Criteria
 U.S. - New Jersey - Water Quality - Practical Quantitation Levels (PQLs)
 U.S. - New Mexico - Water Quality - Standards for Ground Water of 10,000 mg/L TDS Concentration or Less
 U.S. - New York - Occupational Exposure Limits - TWAs
 U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances
 U.S. - North Dakota - Air Pollutants - Guideline Concentrations - 8-Hour
 U.S. - North Dakota - Hazardous Wastes - Maximum Concentration for the Toxicity Characteristic
 U.S. - Oregon - Permissible Exposure Limits - TWAs
 U.S. - Pennsylvania - Drinking Water - Maximum Contaminant Levels (MCLs)
 RTK - U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
 RTK - U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances
 RTK - U.S. - Pennsylvania - RTK (Right to Know) List
 U.S. - South Carolina - Maximum Contaminant Levels (MCLs)
 U.S. - Tennessee - Occupational Exposure Limits - TWAs
 U.S. - Texas - Drinking Water Standards - Maximum Contaminant Levels (MCLs)
 U.S. - Texas - Effects Screening Levels - Long Term
 U.S. - Texas - Effects Screening Levels - Short Term
 U.S. - Utah - Drinking Water - Maximum Contaminant Levels (MCLs)
 U.S. - Vermont - Hazardous Waste - Hazardous Constituents
 U.S. - Vermont - Hazardous Waste - Maximum Contaminant Concentration for Toxicity
 U.S. - Vermont - Permissible Exposure Limits - TWAs
 U.S. - Washington - Dangerous Waste - Dangerous Waste Constituents List
 U.S. - Washington - Permissible Exposure Limits - TWAs
 U.S. - West Virginia - Water Quality - Groundwater Standards - Ceiling Concentrations
 U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 25 Feet to Less Than 40 Feet
 U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 40 Feet to Less Than 75 Feet
 U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 75 Feet or Greater
 U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights Less Than 25 Feet

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision Date : 10/21/2015
Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases:

Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Chronic 1	Hazardous to the aquatic environment - Chronic Hazard Category 1
Carc. 1B	Carcinogenicity Category 1B
Comb. Dust	Combustible Dust
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Flam. Sol. 1	Flammable solids Category 1
Repr. 2	Reproductive toxicity Category 2
Resp. Sens. 1B	Respiratory sensitisation Category 1B
Skin Sens. 1	Skin sensitization Category 1
H228	Flammable solid
Comb. Dust	May form combustible dust concentrations in air
H302	Harmful if swallowed
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H350	May cause cancer

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H361	Suspected of damaging fertility or the unborn child
H410	Very toxic to aquatic life with long lasting effects

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SDS US (GHS HazCom)