Flexovit USA Inc

SAFETY DATA SHEET

SECTION 1 - Identification of the Product and Company

1.1 Product Name — Carbide Burs

1.2 Product Use — Deburring, Finishing, Blending, and Shaping see ANSI B7.1-2017

1.3 Company Details: **Flexovit USA Inc.**

Address: 1305 Eden-Evans Center Rd.
Angola, NY 14006

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SECTION 2 - Hazard Information

2.1 Precautionary statements

Use an appropriate NIOSH approved respirator

Use adequate local exhaust ventilation

Protective gloves or barrier cream are recommended

Safety Glasses with side shields or goggles are recommended

Protective clothing should be worn if repeated or prolonged skin contact or contamination is likely

Always wash hands and face before eating, drinking, or smoking

2.2 Description of Hazards

Inhalation: Dust from grinding can cause irritation of the nose and throat. It also has the potential for causing transient or permanent respiratory disease, including occupational asthma and interstitial fibrosis in a small percentage of exposed individuals. It is reported that cobalt dust is the most probable cause of such respiratory diseases. Symptoms include coughing, wheezing, shortness of breath, chest-tightness and weight loss. Interstitial fibrosis (lung scarring) can lead to permanent disability or death. Certain pulmonary conditions may be aggravated by exposure.

Skin Contact: Can cause irritation or an allergic skin rash due to cobalt sensitization. Certain skin conditions (i.e. dry skin) may be aggravated by exposure.

Skin Absorption: Fume may be absorbed through the skin and block the sweat glands causing a rash to occur.

Eye Contact: Can cause irritation.

Ingestion: Reports outside the industry suggest that ingestion of significant amounts of cobalt has the potential for causing blood, heart and other organ problems.

SECTION 3 - Composition

Ingredient	Formula	% Weight	OSHA Regulated	Cas #
Head:				
Tungsten Carbide		41.0-97.0	N/A	N/A
Cobalt		3.0-30.0	N/A	N/A
Tantalum Carbide		0.0-52.0	N/A	N/A
Titanium Carbide		0.0-20.0	N/A	N/A
Niobium Carbide		0.0-20.0	N/A	N/A
Molybdenum Carbide		0.0-10.0	N/A	N/A
Hafnium Carbide		0.0-10.0	N/A	N/A
Chromium Carbide		0.0-5.1	N/A	N/A
Vanadium Carbide		0.0-2.0	N/A	N/A
Braze:				
Silver		N/A	N/A	7440-22-4
Copper		N/A	N/A	7440-50-8
Zinc		N/A	N/A	7440-66-6
Nickel		N/A	N/A	7440-02-0
Shank:				
Iron		95.00	N/A	1309-37-1
Carbon		0.38/0.43	N/A	7440-44-0
Manganese		0.75/1.00	N/A	7439-96-5
Phosphorus		<0.25	N/A	7723-14-0
Sulfur		<0.25	N/A	7704-34-9
Silicon		0.20/0.35	N/A	7740-21-3
Nickel		0.40/0.70	N/A	7740-02-0
Chromium		0.40/0.60	N/A	7740-47-3
Molybdenum		0.20/0.30	N/A	7439-98-7
Copper		<0.35	N/A	7440-50-8
Tin		<0.25	N/A	7440-31-5
Vanadium		<0.35	N/A	1314-62-1
Aluminum		0.01/0.20	N/A	7429-90-5
Titanium		<0.25	N/A	13463-67-7
Columbium		<0.25	N/A	7440-25-7
Petroleum Naptha		N/A	N/A	6032-32-4

SECTION 4-First Aid

4.1 First Aid for exposure

Inhalation: Remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. If symptoms of pulmonary involvement develop (coughing, wheezing, shortness of breath, etc.) remove from exposure and seek medical attention.

Skin Contact: If irritation or rash occurs, thoroughly wash affected area with soap and water and isolate from exposure. If condition persists seek medical attention.

Skin Absorption: Remove from exposure. Wash thoroughly with water. If condition persists, seek medical attention.

Eye Contact: If irritation occurs, flush with copious amounts of water. If irritation persists, seek medical attention.

Ingestion: For dust or mists: If substantial quantities are swallowed, dilute with a large amount of water, induce vomiting and seek medical attention.

Otherwise: May be toxic; If swallowed, DO NOT induce vomiting unless directed by a physician. Give a glass of water only if the person is conscious. Call a physician.

Carcinogenic Assessment (NTP Annual Report, IARC Monographs, others):

The International Agency for Research on Cancer (IARC) found there was inadequate evidence that metallic cobalt is carcinogenic to humans but that there is sufficient evidence that it is carcinogenic in animals. IARC concluded that metallic cobalt is possibly carcinogenic to humans (Substance Group 2B). Cobalt has not been classified as a known or suspected carcinogen by OSHA or the National Toxicology Program (NTP). Chromium is listed by IARC and NTP as a human carcinogen.

4.2 Signs and Symptoms of Exposure

Acute:

Iron (Iron Oxide) - Irritation of the eyes, nose, throat, metallic taste in the mouth, metal fume fever.

Manganese - Irritation of the eyes, nose, throat, metallic taste in the mouth, metal fume fever.

Chromium - Irritation of the eyes, nose, and lungs; dermatitis

Nickel - Irritation of the eyes, nose, and lungs; dermatitis; "Nickel Itch"; Inflammatory reactions around nickel-containing medical implants and prostheses may also occur.

Molybdenum - Slight irritation of the eyes, nose, and throat.

Vanadium Pentoxide - Irritation to conjunctive and respiratory tract (greenish-black discoloration of the tongue and shortness of breath).

Tin - Generally considered to exhibit a low order of toxicity, may cause irritation of the eyes, nose, throat, and skin.

Titanium Dioxide - Considered a nuisance particulate. High concentrations can cause irritation of the eyes, nose, and throat.

Copper - Fume or dust can cause irritation of the eyes, nose, and throat and a flu-like illness called "Metal Fume Fever". Symptoms include: fever, muscle aches, nausea, chills, cough, weakness, frontal headache, possible blurred vision, shallow respiration, throat dryness/irritation, a sweet or metallic taste, and chest tightness occuring over several hours. This condition may arise 4-12 hours after exposure and symptoms usually sunside within 24 hours.

Chronic:

Iron (Iron Oxide) - Pulmonary effects, siderosis.

Manganese -Bronchitis, pneumonitis, inflammation and/or ulceration of the upper respiratory tract, and possible cancer of the nasal passages and lungs.

Chromium - Ferrochrome alloys have been associated with lung changes in workers expose to these alloys.

Molybdenum - Pain in joints, hands, knees, and feet.

Vanadium Pentoxide - Repeated exposure may cause more severe irritation to the upper respiratory tract such as chronic bronchitis or possible allergic skin rash.

Nickel - Nickel and it's compounds have been reported in cancer of the lungs and throat.

Silver -Can result in argyria, a cosmetic condition characterized by a gray discoloration of the eyes and skin.

SECTION 5 - Fire Fighting Measures

5.1 Means Of Extinction: For powder fires, smother with dry sand, dry dolomite, ABC type fire extinguisher, or flood with water. Also, dry chemical, foam, CO_2

5.2 Unusual Fire or Explosion Hazards: N/A

Flammable Properties:

5.3 Special Fire Fighting Procedures: For a powder fire confined to a small area use a respirator approved for toxic dusts and fumes. For a large fire, fire fighters should use self-contained breathing apparatus.

SECTION 6 - Accidental Release Measures

Ventilate area of spill. Clean up using methods which avoid dust generation such as vacuum (with the appropriate filters) or wet clean up. If airborne dust is generated, use an appropriate NIOSH approved respirator.

SECTION 7- Storage, Handling and Use Procedures

7.1 Handling: Maintain good housekeeping procedures to prevent dust accumulation during grinding. Avoid dust inhalation and direct skin contact with dust.

7.2 Storage: Maintain good housekeeping procedures to prevent dust accumulation.

SECTION 8- Personal Protective Control Measures

8.1 Exposure limits

Chemical	OSHA PEL	ACGIH TLV
Head:		
Tungsten Carbide (limits for Tungsten dust)	5 mg/m^3	5 mg/m^3
Cobalt	0.1 mg/m^3	0.02 mg/m^3
Tantalum Carbide (limits for Tantalum dust)	5 mg/m^3	5 mg/m^3
Titanium Carbide (limits for Titanium dust)	5 mg/m^3	none established
Niobium Carbide (limits for Niobium dust)	5 mg/m^3	5 mg/m^3
Molybdenum Carbide (limits f/ Molybdenum dust)	15 mg/m^3	10 mg/m^3
Hafnium Carbide (limits for Hafnium dust)	0.5 mg/m^3	0.5 mg/m^3
Chromium Carbide (limits f/ Chromium (+3) dust)	0.5 mg/m^3	0.5 mg/m^3
Vanadium Carbide (limits for Vanadium dust)	none established	none established

Braze:			
Silver		0.01 mg/m^3	0.1 mg/m^3
Copper	(limits for Copper fumes)	0.1 mg/m^3	0.2 mg/m^3
	(limits for Copper dust)	1.0 mg/m^3	1.0 mg/m^3
Zinc	(limits for Zinc Oxide fumes)	5 mg/m^3	5 mg/m^3
	(limits for Zinc Oxide dust)	10 mg/m^3	10 mg/m^3
Nickel		0.1 mg/m^3	0.1 mg/m^3
Shank:	**Contaminant:**		
Iron	Iron Oxide Fumes	10 mg/m^3	5 mg/m^3
Carbon	Carbon Oxide	55 mg/m^3	N/A
	Carbon Black	3.5 mg/m^3	3.5 mg/m^3
Manganese	Manganese Dust	5 mg/m^3	5 mg/m^3
	Manganese Fumes	N/A	1.0 mg/m^3
Phosphorus	Phosphorus (Yellow)	0.1 mg/m^3	0.1 mg/m^3
Sulfur	Sulfur	N/A	5 mg/m^3
Silicon	Respirable Dust	N/A	5 mg/m^3
Nickel	Nickel	1.0 mg/m^3	1.0 mg/m^3
Chromium	Chromium	1.0 mg/m^3	0.5 mg/m^3
Molybdenum	Insoluble Compounds	15 mg/m^3	10 mg/m^3
Copper	Dust	1.0 mg/m^3	1.0 mg/m^3
	Fumes	0.1 mg/m^3	0.2 mg/m^3
Tin	Tin Oxide	10 mg/m^3	N/A
Vanadium	Dust	0.5 mg/m^3	0.5 mg/m^3
	Fumes as Vanadium Pentoxide	0.1 mg/m^3	0.5 mg/m^3
Aluminum	Dust	N/A	10 mg/m^3
	Fumes	N/A	5 mg/m^3
Titanium	Titanium Dioxide	15 mg/m^3	5 mg/m^3
Columbium	Columbium	N/A	N/A
Petroleum Naptha	Naptha	500 mg/m^3	100 mg/m^3
(Coating/Rust Preventative)			

8.2 Personal protection requirements and referrals

Respiratory:	Use an appropriate NIOSH approved respirator if airborne dust concentrations exceed the applicable PEL or TLV. All requirements set forth in 29 CFR 1910.134 should be met.
Ventilation:	Use adequate local exhaust ventilation to limit personal exposure to airborne dust to levels below the PEL or TLV. If such equipment is not available, use respirators as specified above. Refer to "Industrial Ventilation" by ACGIH for manual of recommended practices.
Protective Gloves:	Protective gloves or barrier cream are recommended when contact with dust or mist is likely. Prior to applying the barrier cream or use of protective gloves, wash thoroughly. Leather gloves are recommended for welding or brazing.
Eye Protection:	Safety Glasses with side shields or goggles are recommended. Eyewash equipment should be available and accessible at the workplace. Face shield is recommended. Welding shield is required for welding operations.
Body Protection:	Protective clothing should be worn if repeated or prolonged skin contact or contamination is likely.
Hygienic Practices:	Always wash hands and face before eating, drinking, or smoking. Provide safety shower in work area.

SECTION 9- Physical/Chemical Characteristics

Head:

Boiling Point		N/A	Specific Gravity	(H20=1)	11.0-15.5
Vapor Pressure	(mm Hg.)	N/A	Percentage Volatile by Volume		0
Vapor Density	(AIR=1)	N/A	Evaporation Rate		N/A
Solubility in Water		Insoluble	Appearance/Odor		Dark Gray Metal/No odor
			How Best Monitored		Air Sample

Braze:

Melting Point		N/A			
Boiling Point		N/A	Specific Gravity	(H20=1)	3711-2
Vapor Pressure	(mm Hg.)	N/A	Percentage Volatile by Volume		N/A
Vapor Density	(AIR=1)	N/A	Evaporation Rate		N/A
Solubility in Water		No	Appearance/Odor		White metal, no odor

Shank:

Melting Point		27500 C (50000 F)			
Boiling Point		High	Specific Gravity	(H20=1)	7.5-8.5
Vapor Pressure	(mm Hg.)	N/A	Percentage Volatile by Volume		None
Vapor Density	(AIR=1)	N/A	Evaporation Rate		N/A
Solubility in Water		Insoluble	Appearance/Odor		Solid, odorless metal

Coating/Rust Preventative:

Melting Point		N/A			
Boiling Point		400^0 F	Specific Gravity	(H20=1)	0-1
Vapor Pressure	(mm Hg.)	<10mm Hg	Percentage Volatile by Volume		70
Vapor Density	(AIR=1)	5.0	Evaporation Rate		0.1
Solubility in Water	Negligible	<0.1% solubility	Appearance/Odor		Amber colored liquid,
Flash Point		1050 F (TCC)			hydrocarbon odor

SECTION 10 - Stability and Reactivity Data

Stability Stable

Conditions to Avoid Contact with incompatible materials

Incompatibility Contact of dust with strong oxidizers may cause explosions. Also incompatable with acids.

Silver-Acetylene and ethylenimine form explosive compounds with silver. If silver is treated with nitric acid in the presence of ethyl alcohol, silver fulminate can be formed which can be detonated. Fine powder and hydrogen peroxide solutions may explode. Incompatible with oxalic and tartaric acid. Bromoazide explodes on contact with silver foil.

Copper-Ammonium nitrate, bromates, iodates, chlorates, ethylene oxide, hydrazoic acid, potassium oxide, dimethyl sulfoxide and trichloroacetic acid, hydrogen peroxide, sodium peroxide, sodium azide, sulfuric acid, hydrogen sulfide and air, lead azide and actylenic compaounds. Copper ignites on contact with chlorine, fluorine, chlorine trifluoride, and hydrazinium nitrate.

Nickel-May react with fluorine, ammonium nitrate, hydrogen and dioxane, performic acid, selenium, sulfur ammonia, hydrazine, phosphorous, titanium and potassium chlorate and antioxidants.

Materials to Avoid Strong acids, strong oxidizers

Hazardous Decomposition Products Metal fumes-Iron oxide, chromium, nickel, molybdenum, vanadium pentoxide, zinc oxides and other noxious gases may be produced during welding or burning operations. Oxides of carbon. Metal fumes/oxides produced from over-heating while melting or brazing can be toxic.

Hazardous Polymerization Will not occur

SECTION 11 - Toxicological Data

11.1 Component information

Chemical	Short term effects	Long term effects	Carcinogen
Head:			
Tungsten Carbide			No
Cobalt			Yes
Tantalum Carbide			No
Titanium Carbide			No
Niobium Carbide			No
Molybdenum Carbide			No
Hafnium Carbide			No
Chromium Carbide			Yes
Vanadium Carbide			No
Braze:			
Silver			No
Copper			No
Zinc			No
Nickel			Yes
Shank:			
Iron			No
Carbon			No
Manganese			Yes
Phosphorus			No
Sulfur			No
Silicon			No
Nickel			Yes
Chromium			Yes
Molybdenum			No
Copper			No
Tin			No
Vanadium			No
Aluminum			No
Titanium			No
Columbium			No
Petroleum Naptha			No

11.2 Route(s) of Entry and symptoms of exposure

See section 4.2

Grinding cemented carbide product or handling of grinding sludges will produce dust of potentially hazardous ingredients which can be inhaled, swallowed or come in contact with skin or eyes. Steel products in their natural state do not present an inhalation, ingestion, or contact hazard. However, operations such as burning, welding, brazing, sawing, or grinding may result in the effects listed below if exposure exceeds the permissible levels (PEL'S) listed in section 8.

Exposure to the listed elements occurs primarily through the inhalation of dust or fumes; however, certain constituents of this product may possibly cause effects directly on contact with the skin or eyes.

Medical conditions which may be aggravated by exposure to this product include: conjunctivitis of the eye, dermatitis of the skin, asthma, and respiratory diseases.

These elements may also be harmful if swallowed.

During subsequent welding or brazing operations the welding rods, brazing materials, flux, etc. should also be considered as potential sources of contaminant exposure.

Section 12-Ecological Information

Section 13-Disposal Considerations

Dispose of in accordance with the applicable government regulations. May be sold as scrap for reclamation.

Section 14-Transport Information

Section 15-Regulatory Information

California Proposition 65: WARNING! You create dust when you cut, sand, drill or grind materials such as wood, paint, cement, masonry or metal. This dust often contains chemicals known to cause cancer, birth defects or other reproductive harm.

Section 16-Other Information

SDS Revision Date: September 1, 2020

Reason for Update: Mandated Update

Preparation By: FlexOvit USA

COMPANY USE

The information and recommendations set forth herein are taken from sources and references believed to be accurate and complete as of the date hereof. However, FlexOvit USA, Inc makes no expressed or implied warranty with respect to the accuracy of the information or the suitability of the recommendations, and assumes no liability to any user thereof.