Eureka Robo Weld MCW: N2, N3, 635, 450, 650, LC72, 72, 78 and 88

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 03/24/2015 Revision date: 09/09/2015 Supersedes: 03/24/2015 Version: 2.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Identification

Product form : Article

Product name : Eureka Robo Weld MCW: N2, N3, 635, 450, 650, LC72, 72, 78 and 88

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

Use of the substance/mixture : Welding industry

1.3. Details of the supplier of the safety data sheet

Eureka Welding Alloys
2000 E. Avis Dr.
Madison Heights, MI 48045 - USA
T 800-962-8560
rkamen@eurekaweldingalloys.com

1.4. Emergency telephone number

Emergency number : 1-800-962-8560

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Not classified

2.2. Label elements

GHS-US labeling

No labeling applicable

2.3. Other hazards

Other hazards not contributing to the classification : Exposure to metal dusts and oxides may cause metal fume fever. Metal fume fever is a temporary flu-like condition characterized by chills, fever, muscle aches and pains, nausea and vomiting. Typically the symptoms appear within a few hours after exposure and subside within 2-3 days with no permanent effects. Inhalation of fumes or vapors may cause respiratory irritation.

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification (GHS-US)
Iron	(CAS No) 7439-89-6	75 - 98	Not classified
Chromium	(CAS No) 7440-47-3	<= 20	Not classified
Nickel	(CAS No) 7440-02-0	<= 6	Skin Sens. 1, H317 Carc. 2, H351 STOT RE 1, H372
Titanium dioxide	(CAS No) 13463-67-7	<= 5	Carc. 2, H351
Silicon	(CAS No) 7440-21-3	<= 5	Not classified
Manganese	(CAS No) 7439-96-5	<= 5	Not classified
Limestone	(CAS No) 1317-65-3	<= 5	Not classified
Calcium fluoride	(CAS No) 7789-75-5	<= 5	Not classified
Carbon	(CAS No) 7440-44-0	<= 5	Not classified
Tungsten	(CAS No) 7440-33-7	<= 5	Flam. Sol. 1, H228 Self-heat. 2, H252
Cobalt	(CAS No) 7440-48-4	<= 5	Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351

Titanium	(CAS No) 7440-32-6	<= 5	Not classified
Vanadium	(CAS No) 7440-62-2	<= 5	Not classified
Molybdenum	(CAS No) 7439-98-7	<= 5	Not classified
Potassium titanate	(CAS No) 12030-97-6	<= 5	Not classified
Niobium	(CAS No) 7440-03-1	<= 5	Not classified

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : If inhaled and if breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

First-aid measures after skin contact : Gently wash with plenty of soap and water. Wash contaminated clothing before reuse. In the event of contact with molten product: Cool skin rapidly with cold water after contact with molten product.

First-aid measures after eye contact : Hot material: Immediately flush eyes with plenty of water for at least 15 minutes. Seek medical assistance for mechanical removal of this material from the eye. Cold material: Flush eyes with plenty of water. Seek medical attention if irritation persists. Use of flush fluid, other than water, is not recommended.

First-aid measures after ingestion : Not expected to present a significant ingestion hazard under anticipated conditions of normal use.

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

Symptoms/injuries after inhalation : Dust from this product may cause irritation to the respiratory tract. Inhalation of fumes may cause metal fume fever.

Symptoms/injuries after skin contact : Heated product causes burns.

Symptoms/injuries after eye contact : Excessive dust production may cause minor eye irritation. Heated product causes burns.

Chronic symptoms : Excessive or prolonged inhalation of fumes may cause metal fume fever.

4.3. Indication of any immediate medical attention and special treatment needed

All treatments should be based on observed signs and symptoms of distress in the patient.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide. Dry chemical. Foam. Sand. Water fog. Use extinguishing media appropriate for surrounding fire.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Wear fire/flame resistant/retardant clothing. Wear a self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Avoid creating or spreading dust.

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Avoid release to the environment. Prevent dispersion.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Sweep or shovel spills into appropriate container for disposal. Minimize generation of dust.

6.4. Reference to other sections

Section 7: safe handling. Section 8: personal protective equipment. Section 13: disposal information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid breathing dust, fume, gas. Ensure good ventilation of the work station. Handle in accordance with good industrial hygiene and safety procedures.

Hygiene measures : Always wash your hands immediately after handling this product, and once again before leaving the workplace. Contaminated work clothing should not be allowed out of the workplace.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a dry place. Store in correctly labelled containers.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Nickel (7440-02-0)		
ACGIH	ACGIH TWA (mg/m³)	0.2 mg/m³ (inhalable) 0.1 mg/m³ (soluble) 1.5 mg/m³ (inhalable fraction)

Silicon (7440-21-3)		
ACGIH	ACGIH TWA (mg/m³)	10 mg/m³
OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³ (total dust) 5 mg/m³ (respirable dust)

Limestone (1317-65-3)		
ACGIH	ACGIH TWA (mg/m³)	10 mg/m³
OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³ (total dust) 5 mg/m³ (respirable dust)

Manganese (7439-96-5)		
ACGIH	ACGIH TWA (mg/m³)	0.02 mg/m³
ACGIH	Remark (ACGIH)	CNS impair; A4
OSHA	OSHA PEL (Ceiling) (mg/m³)	5 mg/m³

Tungsten (7440-33-7)		
ACGIH	ACGIH TWA (mg/m³)	1 mg/m³ (soluble compounds) 5 mg/m³ (insoluble compounds)
ACGIH	ACGIH STEL (mg/m³)	3 mg/m³ (soluble compounds) 10 mg/m³ (insoluble compounds)

Carbon (7440-44-0)		
OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³ (total dust) 5 mg/m³ (respirable dust)

Chromium (7440-47-3)		
ACGIH	ACGIH TWA (mg/m³)	0.5 mg/m³
OSHA	OSHA PEL (TWA) (mg/m³)	1 mg/m³
OSHA	Remark (OSHA)	(Chromium metal and insol. salts (as Cr)

Cobalt (7440-48-4)		
ACGIH	ACGIH TWA (mg/m³)	0.02 mg/m³
ACGIH	Remark (ACGIH)	Pneumonitis
OSHA	OSHA PEL (TWA) (mg/m³)	0.1 mg/m³

Molybdenum (7439-98-7)		
ACGIH	ACGIH TWA (mg/m³)	10 mg/m³ (unsoluble, inhalable) 3 mg/m³ (unsoluble, respirable) 0.5 mg/m³ (soluble, inhalable)

8.2. Exposure controls

Appropriate engineering controls	:	Use engineering controls to eliminate or reduce exposures below exposure limits. Ensure good ventilation of the work station.
Materials for protective clothing	:	Flame retardant protective clothing.
Hand protection	:	Wear thermal protective gloves when working around hot surfaces.
Eye protection	:	Wear goggles with suitable filter lenses when use is cutting/welding.
Respiratory protection	:	In case of inadequate ventilation wear respiratory protection. Use air-purifying respirator equipped with particulate filtering cartridges.
Environmental exposure controls	:	Avoid release to the environment. Emissions from ventilation or work process equipment should be checked to ensure they comply with requirements of environmental protection legislation.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid
Appearance	:	Metallic solid.
Color	:	Silver blue
Odor	:	odorless
Odor threshold	:	No data available
pH	:	Not applicable
Melting point	:	1260 °C
Freezing point	:	No data available
Boiling point	:	No data available
Flash point	:	No data available
Relative evaporation rate (butyl acetate=1)	:	No data available
Flammability (solid, gas)	:	No data available
Explosive limits	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available
Vapor pressure	:	No data available
Relative density	:	No data available
Relative vapor density at 20 °C	:	No data available
Specific gravity / density	:	8 g/cm³
Solubility	:	Not applicable
Log Pow	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable at ambient temperature and under normal conditions of use.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Do not store with incompatible materials.

10.5. Incompatible materials

Acids. Bases. Oxidizing agent.

10.6. Hazardous decomposition products

metallic oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure : Dermal; During use, welding fumes are released with potential for inhalation exposure.

Acute toxicity : Not classified

Titanium dioxide (13463-67-7)	
LD50 oral rat	> 5000 mg/kg
LC50 inhalation rat (mg/l)	> 6.82 mg/l/4h

Nickel (7440-02-0)	
LD50 oral rat	> 9000 mg/kg OECD Guideline 401
LC50 inhalation rat (mg/l)	> 10.2 mg/l/4h No effects observed

Silicon (7440-21-3)	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rabbit	> 5000 mg/kg
LC50 inhalation rat (mg/l)	> 2000 mg/l/4h

Iron (7439-89-6)	
LD50 oral rat	> 5000 mg/kg
LC50 inhalation rat (mg/l)	> 5 mg/l/4h

Manganese (7439-96-5)	
LD50 oral rat	> 2000 mg/kg
LC50 inhalation rat (mg/l)	> 5.14 mg/kg

Limestone (1317-65-3)	
LD50 oral rat	6450 mg/kg
ATE US (oral)	6450.000 mg/kg bodyweight

Calcium fluoride (7789-75-5)	
LD50 oral rat	> 2000 mg/kg no mortality at this level
LC50 inhalation rat (mg/l)	> 5.07 mg/l/4h no mortality at this level

Tungsten (7440-33-7)	
LD50 oral rat	> 2000 mg/kg
LD50 dermal rat	> 2000 mg/kg
LC50 inhalation rat (mg/l)	> 5.4 lb/h

Chromium (7440-47-3)	
LD50 oral rat	> 5000 mg/kg OECD Guideline 420
LC50 inhalation rat (mg/l)	> 5.1 mg/l/4h OECD Guideline 403

Cobalt (7440-48-4)	
LD50 oral rat	7150 mg/kg OECD Guideline 401
LD50 dermal rat	> 2000 mg/kg OECD Guideline 402 as tricobalt tetraoxide
ATE US (oral)	7150.000 mg/kg

Vanadium (7440-62-2)	
LD50 oral rat	> 2000 mg/kg

Molybdenum (7439-98-7)	
LD50 oral rat	4233 mg/kg
LD50 dermal rat	> 2000 mg/kg
LC50 inhalation rat (mg/l)	5.1 mg/l/4h
ATE US (oral)	4233.000 mg/kg
ATE US (dust, mist)	5.100 mg/l/4h

Titanium (7440-32-6)	
LD50 oral rat	> 5000 mg/kg

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

Titanium dioxide (13463-67-7)	
NOAEL (chronic,oral,animal/male,2 years)	5 mg/kg bodyweight rat
IARC group	2B - Possibly carcinogenic to humans, as dust

Nickel (7440-02-0)	
NOAEL (chronic,oral,animal/male,2 years)	0.4 mg/kg bodyweight OECD 451 (Carcinogenicity Studies). Adrenal gland pheochromocytomas (benign and malignant) were significantly increased in exposed male.
NOAEL (chronic,oral,animal/female,2 years)	0.4 mg/kg bodyweight OECD 451 (Carcinogenicity Studies). The incidence of combined (adenoma and carcinoma) cortical tumors among 0.4 mg Ni/m3 females, although statistically higher compared to the concurrent controls, falls within the historical control range; therefore, in the present study, this tumor is of uncertain relationship to Nickel metal exposure.
IARC group	2B - Possibly carcinogenic to humans
National Toxicology Program (NTP) Status	3 - Reasonably anticipated to be Human Carcinogen

Chromium (7440-47-3)	
IARC group	3 - Not classifiable
National Toxicology Program (NTP) Status	Not listed in carcinogenicity class

Cobalt (7440-48-4)	
IARC group	2B - Possibly carcinogenic to humans

Reproductive toxicity : Not classified
Specific target organ toxicity (single exposure) : Not classified
Specific target organ toxicity (repeated exposure) : Not classified

Nickel (7440-02-0)	
LOAEL (inhalation,rat,dust/mist/fume,90 days)	0.1 mg/l/6h/day OECD Guideline 451
NOAEL (oral,rat,90 days)	< 4 mg/kg bodyweight/day OECD Guideline 412. increased incidence of granulomatous inflammation and mucoid exudate.
NOAEL (inhalation,rat,dust/mist/fume,90 days)	> 10.2 mg/l/6h/day

Aspiration hazard : Not classified

Potential Adverse human health effects and symptoms : Irritation to eyes, skin and respiratory tract. Exposure to metal dusts and oxides may cause metal fume fever. Metal fume fever is a temporary flu-like condition characterized by chills, fever, muscle aches and pains, nausea and vomiting. Typically the symptoms appear within a few hours after exposure and subside within 2-3 days with no permanent effects.

Prolonged overexposure may cause ulceration of the skin and perforation of the nasal septum, dermatitis and pneumonia.

Carcinogenic to humans on inhalation: Nickel. Chromium VI compounds.

Symptoms/injuries after inhalation : Dust from this product may cause irritation to the respiratory tract. Inhalation of fumes may cause metal fume fever.
Symptoms/injuries after skin contact : Heated product causes burns.
Symptoms/injuries after eye contact : Excessive dust production may cause minor eye irritation. Heated product causes burns.
Chronic symptoms : Excessive or prolonged inhalation of fumes may cause metal fume fever.

SECTION 12: Ecological information

12.1. Toxicity

Nickel (7440-02-0)	
LC50 fish 1	15.3 mg/l Oncorhynchus mykiss (as Nickel chloride)
LOEC (chronic)	0.12 mg/l as Nickel(II) chloride hexahydrate
NOEC (chronic)	0.057 mg/l as Nickel(II) chloride hexahydrate

Iron (7439-89-6)	
LC50 fish 1	> 10000 mg/l

Manganese (7439-96-5)	
LC50 fish 1	> 3.6 mg/l
EC50 Daphnia 1	> 1.6 mg/l
NOEC (acute)	3.6 mg/l
NOEC (chronic)	1.7 mg/l

Limestone (1317-65-3)	
LC50 fish 1	> 200 mg/l

Calcium fluoride (7789-75-5)	
LC50 fish 1	> 100 mg/kg
EC50 Daphnia 1	> 100 mg/l

Tungsten (7440-33-7)	
LC50 fish 1	> 200 mg/l
NOEC (acute)	200 mg/l
NOEC (chronic)	>= 9.8 mg/l

Cobalt (7440-48-4)	
LC50 fish 1	275 mg/l
LOEC (chronic)	53.6 mg/l as cobalt dichloride
NOEC (chronic)	31.1 mg/l 28 d as cobalt dichloride

Molybdenum (7439-98-7)	
LC50 fish 1	609 mg/l
EC50 Daphnia 1	> 1000 mg/l
NOEC chronic fish	> 19.5 mg/l

Titanium (7440-32-6)	
LC50 fish 1	> 100 mg/l
EC50 Daphnia 1	20000 mg/l

12.2. Persistence and degradability

Nickel (7440-02-0)	
Persistence and degradability	Not established.

Limestone (1317-65-3)	
Persistence and degradability	Not readily biodegradable.

12.3. Bioaccumulative potential

Nickel (7440-02-0)	
Bioconcentration factor (BCF REACH)	> 600
Bioaccumulative potential	Expected to bioaccumulate. Not established.

Silicon (7440-21-3)	
Bioaccumulative potential	Not expected to bioaccumulate.

Limestone (1317-65-3)	
Bioaccumulative potential	Does not biaccumulate significantly.

Cobalt (7440-48-4)	
Bioconcentration factor (BCF REACH)	< 73
Bioaccumulative potential	Not expected to bioaccumulate.

12.4. Mobility in soil

Eureka Robo Weld MCW: N2, N3, 635, 450, 650, LC72, 72, 78 and 88	
Mobility in soil	Not mobile.

12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste) : Disposal must be done according to official regulations.

Waste disposal recommendations : Collect as much as possible in a clean container for (preferable) reuse or disposal. Dispose in a safe manner in accordance with local/national regulations.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not considered a dangerous good for transport regulations

TDG

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

Titanium dioxide (13463-67-7)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Nickel (7440-02-0)
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313
Silicon (7440-21-3)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Iron (7439-89-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Manganese (7439-96-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313
Limestone (1317-65-3)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Calcium fluoride (7789-75-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Carbon (7440-44-0)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Tungsten (7440-33-7)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Chromium (7440-47-3)
Subject to reporting requirements of United States SARA Section 313 Listed on the United States TSCA (Toxic Substances Control Act) inventory
Cobalt (7440-48-4)
Subject to reporting requirements of United States SARA Section 313 Listed on the United States TSCA (Toxic Substances Control Act) inventory

Vanadium (7440-62-2)
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313

Molybdenum (7439-98-7)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Titanium (7440-32-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

Titanium dioxide (13463-67-7)
Listed on the Canadian DSL (Domestic Sustances List)

Nickel (7440-02-0)
Listed on the Canadian DSL (Domestic Sustances List)

Silicon (7440-21-3)
Listed on the Canadian DSL (Domestic Sustances List)

Iron (7439-89-6)
Listed on the Canadian DSL (Domestic Sustances List)

Manganese (7439-96-5)
Listed on the Canadian DSL (Domestic Sustances List)

Limestone (1317-65-3)
Listed on the Canadian DSL (Domestic Sustances List)

Carbon (7440-44-0)
Listed on the Canadian DSL (Domestic Sustances List)

Tungsten (7440-33-7)
Listed on the Canadian DSL (Domestic Sustances List)

Chromium (7440-47-3)
Listed on the Canadian DSL (Domestic Sustances List)

Cobalt (7440-48-4)
Listed on the Canadian DSL (Domestic Sustances List)

Vanadium (7440-62-2)
Listed on the Canadian DSL (Domestic Sustances List)

Molybdenum (7439-98-7)
Listed on the Canadian DSL (Domestic Sustances List)

Titanium (7440-32-6)
Listed on the Canadian DSL (Domestic Sustances List)

EU-Regulations

No additional information available

National regulations

Titanium dioxide (13463-67-7)
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on KECI (Korean Existing Chemicals Inventory) Listed on Taiwan National Chemical Inventory Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Listed on NZIoC (New Zealand Inventory of Chemicals)

Nickel (7440-02-0)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on KECI (Korean Existing Chemicals Inventory) Listed on Taiwan National Chemical Inventory Listed on the AICS (Australian Inventory of Chemical Substances) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Silicon (7440-21-3)

Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on KECI (Korean Existing Chemicals Inventory)
Listed on Taiwan National Chemical Inventory
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Iron (7439-89-6)

Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on KECI (Korean Existing Chemicals Inventory)
Listed on Taiwan National Chemical Inventory
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Manganese (7439-96-5)

Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on KECI (Korean Existing Chemicals Inventory)
Listed on Taiwan National Chemical Inventory
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Limestone (1317-65-3)

Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on Taiwan National Chemical Inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Inventory of Existing Chemical Substances Produced or Imported in China (IECSC).

Carbon (7440-44-0)

Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on KECI (Korean Existing Chemicals Inventory)
Listed on Taiwan National Chemical Inventory
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on NZIoC (New Zealand Inventory of Chemicals)

Tungsten (7440-33-7)

Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on KECI (Korean Existing Chemicals Inventory)
Listed on Taiwan National Chemical Inventory
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on NZIoC (New Zealand Inventory of Chemicals)

Chromium (7440-47-3)

Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on KECI (Korean Existing Chemicals Inventory)
Listed on Taiwan National Chemical Inventory
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Cobalt (7440-48-4)

Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on KECI (Korean Existing Chemicals Inventory)
Listed on Taiwan National Chemical Inventory
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Vanadium (7440-62-2)

Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on KECI (Korean Existing Chemicals Inventory)
Listed on Taiwan National Chemical Inventory
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Molybdenum (7439-98-7)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on KECI (Korean Existing Chemicals Inventory) Listed on Taiwan National Chemical Inventory Listed on the AICS (Australian Inventory of Chemical Substances) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Titanium (7440-32-6)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on KECI (Korean Existing Chemicals Inventory) Listed on Taiwan National Chemical Inventory Listed on the AICS (Australian Inventory of Chemical Substances) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

15.3. US State regulations

Titanium dioxide (13463-67-7)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
Yes	No	No	No	

Nickel (7440-02-0)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
Yes	No	No	No	

Cobalt (7440-48-4)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
Yes	No	No	No	

Titanium dioxide (13463-67-7)
U.S. - Minnesota - Hazardous Substance List U.S. - New Jersey - Right to Know Hazardous Substance List

Nickel (7440-02-0)
U.S. - Minnesota - Hazardous Substance List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - New York - Right to Know List of Hazardous Chemicals U.S. - Pennsylvania - List of Hazardous Substances

Silicon (7440-21-3)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Minnesota - Hazardous Substance List

Manganese (7439-96-5)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - New York - Right to Know List of Hazardous Chemicals U.S. - Minnesota - Hazardous Substance List

Limestone (1317-65-3)
U.S. - New Jersey - Right to Know Hazardous Substance List

Tungsten (7440-33-7)
U.S. - New Jersey - Right to Know Hazardous Substance List

Chromium (7440-47-3)
U.S. - Minnesota - Hazardous Substance List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - List of Hazardous Substances

Cobalt (7440-48-4)
U.S. - Minnesota - Hazardous Substance List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - New York - Right to Know List of Hazardous Chemicals

Vanadium (7440-62-2)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - New York - Right to Know List of Hazardous Chemicals

Molybdenum (7439-98-7)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - New York - Right to Know List of Hazardous Chemicals

Titanium (7440-32-6)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - New York - Right to Know List of Hazardous Chemicals

SECTION 16: Other information

Indication of changes : GHS classification information. Revised sections: 1 - 16.

Revision date : 09/09/2015

Data sources : ACGIH (American Conference of Government Industrial Hygienists).
European Chemicals Agency (ECHA) Registered Substances list.
European Standards: Personal Protective Equipment; accessed at: http://ec.europa.eu/enterprise/policies/european-standards/harmonised-standards/personal-protective-equipment/index_en.htm.
Internal Company test data.
US National Library of Medicine National Institutes of Health Haz-Map. Accessed at http://hazmap.nlm.nih.gov

Abbreviations and acronyms : ACGIH (American Conference of Government Industrial Hygienists).
ATE: Acute Toxicity Estimate.
CAS (Chemical Abstracts Service) number.
EC50: Environmental Concentration associated with a response by 50% of the test population.
GHS: Globally Harmonized System (of Classification and Labeling of Chemicals).
LD50: Lethal Dose for 50% of the test population. Lowest Observed Adverse Effect Level.
NOEC: No Observable Effect Concentration.
PBT: Persistent, Bioaccumulative, Toxic.
SDS: Safety Data Sheet.
TSCA: Toxic Substances Control Act.
TWA: Time Weighted Average.
vPvB: Very Persistent and Very Bioaccumulative.

Full text of H-phrases:

Carc. 2	Carcinogenicity Category 2
Flam. Sol. 1	Flammable solids Category 1
Resp. Sens. 1	Respiratory sensitisation Category 1
Self-heat. 2	Self-heating substances and mixtures Category 2
Skin Sens. 1	Skin sensitization Category 1
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
H228	Flammable solid
H252	Self-heating in large quantities; may catch fire
H317	May cause an allergic skin reaction
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H351	Suspected of causing cancer
H372	Causes damage to organs through prolonged or repeated exposure

SDS US (GHS HazCom 2012)

SDS prepared by:
The Redstone Group, LLC
6077 Frantz Rd. Suite 206
Dublin, OH USA 43017
T 614-923-7472
www.redstonegrp.com

.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