



Type 302 Stainless Steel Wire Brushes

Safety Data Sheet

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

1.1. Product identifier

Product name : Type 302 Stainless Steel Wire Brushes

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

Use of the substance/mixture : Cleaning, Deburring and Finishing Metal Components

1.3. Details of the supplier of the safety data sheet

Radnor Products
259 North Radnor – Chester Road
Suite 100
Radnor, PA 19087-5283

1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

This product as manufactured is defined as an article per 29 CFR 1910.1200. No exposure hazards are anticipated during normal product handling conditions. In most cases, the material(s) removed from the workpiece may present a greater hazard than material released by the product. Based upon the materials that are contained within the working portion of this product it is possible that some dust particles from this product may be generated. The following safety data is presented for potential exposure hazards as associated with the dust particles that are related to this product.

Classification (GHS-US)

Not classified

2.2. Label elements

GHS-US labeling

This product as manufactured is defined as an article, therefore no labeling is required for the product as manufactured.

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

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Name	Product identifier	%	Classification (GHS-US)
Iron	(CAS No) 7439-89-6	< 99.0	Acute Tox. 4 (Oral), H302
Nickel	(CAS No) 7440-02-0	0 – 35.0	Skin Sens. 1, H317 Carc. 1B, H350 STOT RE 1, H372
Chromium	(CAS No) 7440-47-3	< 35.0	Not classified
Manganese	(CAS No) 7439-96-5	< 10.0	Not classified
Vanadium	(CAS No) 7440-62-2	< 4.5	Not classified
Silicon	(CAS No) 7440-21-3	< 2.5	Not classified
Cobalt	(CAS No) 7440-48-4	< 4.5	Carc. 2, H351
Molybdenum	(CAS No) 7439-98-7	< 10.0	Not classified
Tungsten	(CAS No) 7440-33-7	< 6.5	Not classified
Copper	(CAS No) 7440-50-8	< 4.5	Not classified
Aluminum	(CAS No) 7429-90-5	0 – 2.0	Not classified
Titanium	(CAS No) 7440-32-6	< 2.5	Not classified
Columbium	(CAS No) 7440-03-1	< 1.1	Not classified
Sulfur	(CAS No) 7704-34-9	< 0.45	Skin Irrit. 2, H315
Phosphorus	(CAS No) 7723-14-0	< 0.45	Not classified
Tin	(CAS No) 7440-31-5	< 0.05	Not classified
Tantalum	(CAS No) 7440-25-7	< 0.02	Not classified
Boron	(CAS No) 7440-42-8	< 0.01	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 : Remove victim from source of exposure to fresh air. If breathing is difficult administer oxygen. Seek medical attention.
- First-aid measures after skin contact : Wash with soap and water. Seek medical advice if skin irritation develops or persists.
- First-aid measures after eye contact : Flush with plenty of water for at least 15 minutes. Seek medical advice if irritation develops or persists.
- First-aid measures after ingestion : Seek medical attention.

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

- Symptoms/injuries after inhalation : Dusts may cause coughing, shortness of breath. Prolonged breathing of dusts may affect breathing capacity.
- Symptoms/injuries after skin contact : Dusts may cause irritation. May cause abrasions.
- Symptoms/injuries after eye contact : Dust may irritate or damage the eyes without protection.
- Symptoms/injuries after ingestion : None under normal use.

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

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Use water, carbon dioxide, foam or dry chemical.
- Unsuitable extinguishing media : None.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : None known.
- Explosion hazard : None known.

5.3. Advice for firefighters

- Protection during firefighting : Firefighters should wear full protective gear.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

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6.2. Environmental precautions

None.

6.3. Methods and material for containment and cleaning up

For containment : No special measures required.

Methods for cleaning up : No special measures required.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Handle with care, avoid impact.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store dry at 20° C +/- 20 °C; 55-60% air humidity

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Iron (7439-89-6)		
ACGIH	Not applicable	
OSHA	Not applicable	
Chromium (7440-47-3)		
ACGIH	ACGIH TWA (mg/m ³)	0.5 mg/m ³
OSHA	OSHA PEL (TWA) (mg/m ³)	1 mg/m ³
Nickel (7440-02-0)		
ACGIH	ACGIH TWA (mg/m ³)	1.5 mg/m ³ (inhalable fraction)
OSHA	OSHA PEL (TWA) (mg/m ³)	1 mg/m ³
Manganese (7439-96-5)		
ACGIH	ACGIH TWA (mg/m ³)	0.02 mg/m ³ (respirable fraction) 0.1 mg/m ³ (inhalable fraction)
OSHA	OSHA PEL (Ceiling) (mg/m ³)	5 mg/m ³ (fume)
Tungsten (7440-33-7)		
ACGIH	ACGIH TWA (mg/m ³)	5 mg/m ³
ACGIH	ACGIH STEL (mg/m ³)	10 mg/m ³
OSHA	Not applicable	
Molybdenum (7439-98-7)		
ACGIH	ACGIH TWA (mg/m ³)	10 mg/m ³ (inhalable fraction) 3 mg/m ³ (respirable fraction)
OSHA	Not applicable	
Aluminum (7429-90-5)		
ACGIH	ACGIH TWA (mg/m ³)	1 mg/m ³ (respirable fraction)
OSHA	OSHA PEL (TWA) (mg/m ³)	15 mg/m ³ (total dust) 5 mg/m ³ (respirable fraction)
Copper (7440-50-8)		
ACGIH	ACGIH TWA (mg/m ³)	0.2 mg/m ³ (fume)
OSHA	OSHA PEL (TWA) (mg/m ³)	0.1 mg/m ³ (fume) 1 mg/m ³ (dust and mist)

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Silicon (7440-21-3)		
ACGIH	Not applicable	
OSHA	OSHA PEL (TWA) (mg/m ³)	15 mg/m ³ (total dust) 5 mg/m ³ (respirable fraction)
Cobalt (7440-48-4)		
ACGIH	ACGIH TWA (mg/m ³)	0.02 mg/m ³
OSHA	OSHA PEL (TWA) (mg/m ³)	0.1 mg/m ³ (dust and fume)
Vanadium (7440-62-2)		
ACGIH	Not applicable	
OSHA	Not applicable	
Columbium (7440-03-1)		
ACGIH	Not applicable	
OSHA	Not applicable	
Sulfur (7704-34-9)		
ACGIH	Not applicable	
OSHA	Not applicable	
Phosphorus elemental (7723-14-0)		
ACGIH	ACGIH TWA (mg/m ³)	0.1 mg/m ³
OSHA	OSHA PEL (TWA) (mg/m ³)	0.1 mg/m ³
Tin (7440-31-5)		
ACGIH	ACGIH TWA (mg/m ³)	2.0 mg/m ³
OSHA	OSHA PEL (TWA) (mg/m ³)	2.0 mg/m ³
Tantalum (7440-25-7)		
OSHA	OSHA TWA (mg/m ³)	2.0 mg/m ³
NIOSH	NOISH (TWA) (mg/m ³)	5.0 mg/m ³
Boron (7440-42-8)		
ACGIH	Not applicable	
OSHA	Not applicable	
Titanium (7440-32-6)		
ACGIH	Not applicable	
OSHA	Not applicable	

Note: Consideration should be given to the base material and coating that are being worked upon.

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8.2. Exposure controls

Appropriate engineering controls:

Utilize adequate ventilation to minimize the exposure to airborne particulates and maintain the concentration of contaminants below the occupational exposure limits.

Respiratory Protection:

When exposure limits are exceeded or when the dust concentrations are excessive, approved respirators for those conditions should be used. When selecting the respiratory protection equipment, consideration of the exposure to the coating or the base materials being worked on should be included. Local regulations and standards should be followed where appropriate. The type of respiratory equipment used should be selected according to the contaminate type, form and concentration being produced. Select and use respirators in accordance with applicable regulations and good industrial hygiene practice.

Hand protection:

The use of cloth or leather gloves is recommended.

Eye Protection:

Safety goggles or face shield over safety glasses with side shields.

Hearing Protection:

Hearing protection may be required.

Skin and body protection:

The use of protective clothing should be used as needed to prevent the contamination of personal clothing.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Metal
Color	: Silver
Odor	: Odorless
Odor threshold	: No data available
pH	: No data available
Melting point	: No data available
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
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Vapor pressure	: No data available
Specific gravity	: 7
Relative vapor density at 20 °C	: No data available
Solubility	: Insoluble
Log Pow	: No data available
Log Kow	: 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

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10.2. Chemical stability

The product is stable at normal handling and storage conditions.

10.3. Possibility of hazardous reactions

Will not occur.

10.4. Conditions to avoid

None.

10.5. Incompatible materials

None.

10.6. Hazardous decomposition products

Metal fumes - iron oxide, manganese, nickel, chromium, molybdenum, copper, vanadium, pentoxide

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Iron (7439-89-6)	
LD50 oral rat	984 mg/kg
ATE US (oral)	984.000 mg/kg

Nickel (7440-02-0)	
LD50 oral rat	> 9000 mg/kg

Manganese (7439-96-5)	
LD50 oral rat	9 g/kg
ATE US (oral)	9000000.000 mg/kg

Silicon (7440-21-3)	
LD50 oral rat	3160 mg/kg

Cobalt (7440-48-4)	
LD50 oral rat	6171 mg/kg
LC50 inhalation rat (mg/l)	> 10 mg/l (Exposure time: 1 h)
ATE US (oral)	6170.000 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

Chromium (7440-47-3)	
IARC group	3 - Not classifiable

Nickel (7440-02-0)	
IARC group	2B - Possibly carcinogenic to humans
National Toxicology Program (NTP) Status	3 - Reasonably anticipated to be Human Carcinogen
In OSHA Hazard Communication Carcinogen list	Yes

Cobalt (7440-48-4)	
IARC group	2B - Possibly carcinogenic to humans
National Toxicology Program (NTP) Status	1 - Evidence of Carcinogenicity
In OSHA Hazard Communication Carcinogen list	Yes

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

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Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

Nickel (7440-02-0)	
LC50 fish 1	> 100 mg/l (Exposure time: 96 h - Species: Brachydanio rerio)
EC50 Daphnia 1	> 100 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 fish 2	1.3 mg/l (Exposure time: 96 h - Species: Cyprinus carpio [semi-static])
EC50 Daphnia 2	1 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])

Copper (7440-50-8)	
LC50 fish 1	0.0068 - 0.0156 mg/l (Exposure time: 96 h - Species: Pimephales promelas)
EC50 Daphnia 1	0.03 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
LC50 fish 2	< 0.3 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])

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

Effect on ozone layer : No additional information available

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

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not a dangerous good as defined in transport regulations

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SECTION 15: Regulatory information

15.1. US Federal regulations

Iron (7439-89-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Chromium (7440-47-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Listed on SARA Section 313 (Specific toxic chemical listings)	
SARA Section 313 - Emission Reporting	1.0 %
Nickel (7440-02-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Listed on SARA Section 313 (Specific toxic chemical listings)	
SARA Section 313 - Emission Reporting	0.1 %
Manganese (7439-96-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Listed on SARA Section 313 (Specific toxic chemical listings)	
SARA Section 313 - Emission Reporting	1.0 %
Tungsten (7440-33-7)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Molybdenum (7439-98-7)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Aluminum (7429-90-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Listed on SARA Section 313 (Specific toxic chemical listings)	
SARA Section 313 - Emission Reporting	1.0 % (dust or fume only)
Copper (7440-50-8)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Listed on SARA Section 313 (Specific toxic chemical listings)	
SARA Section 313 - Emission Reporting	1.0 %
Silicon (7440-21-3)	
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	
Listed on SARA Section 313 (Specific toxic chemical listings)	
SARA Section 313 - Emission Reporting	0.1 %

15.2. US State regulations

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 significance risk level (NSRL)
Yes	No	No	No	.08 mg/m ³

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 significance risk level (NSRL)
Yes	No	No	No	

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

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Nickel (7440-02-0)

U.S. - Massachusetts - Right To Know List
 U.S. - Minnesota - Hazardous Substance List
 U.S. - New Jersey - Right to Know Hazardous Substance List
 U.S. - Pennsylvania - RTK (Right to Know) List

Manganese (7439-96-5)

U.S. - Massachusetts - Right To Know List
 U.S. - Minnesota - Hazardous Substance List
 U.S. - New Jersey - Right to Know Hazardous Substance List
 U.S. - Pennsylvania - RTK (Right to Know) List

Tungsten (7440-33-7)

U.S. - Massachusetts - Right To Know List
 U.S. - Minnesota - Hazardous Substance List
 U.S. - New Jersey - Right to Know Hazardous Substance List
 U.S. - Pennsylvania - RTK (Right to Know) List

Molybdenum (7439-98-7)

U.S. - Massachusetts - Right To Know List
 U.S. - Minnesota - Hazardous Substance List
 U.S. - New Jersey - Right to Know Hazardous Substance List
 U.S. - Pennsylvania - RTK (Right to Know) List

Aluminum (7429-90-5)

U.S. - Massachusetts - Right To Know List
 U.S. - Minnesota - Hazardous Substance List
 U.S. - New Jersey - Right to Know Hazardous Substance List
 U.S. - Pennsylvania - RTK (Right to Know) List

Copper (7440-50-8)

U.S. - Massachusetts - Right To Know List
 U.S. - Minnesota - Hazardous Substance List
 U.S. - New Jersey - Right to Know Hazardous Substance List
 U.S. - Pennsylvania - RTK (Right to Know) List

Silicon (7440-21-3)

U.S. - Massachusetts - Right To Know List
 U.S. - Minnesota - Hazardous Substance List
 U.S. - New Jersey - Right to Know Hazardous Substance List
 U.S. - Pennsylvania - RTK (Right to Know) List

Cobalt (7440-48-4)

U.S. - Massachusetts - Right To Know List
 U.S. - Minnesota - Hazardous Substance List
 U.S. - New Jersey - Right to Know Hazardous Substance List
 U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Full text of H-phrases::

Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Carc. 1B	Carcinogenicity Category 1B
Carc. 2	Carcinogenicity Category 2
Skin Sens. 1	Skin sensitization Category 1
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
H302	Harmful if swallowed
H317	May cause an allergic skin reaction
H350	May cause cancer
H351	Suspected of causing cancer
H372	Causes damage to organs through prolonged or repeated exposure
H315	Causes skin irritation

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