healthmark
INDUSTRIES CO.
health care products
800-521-6224
www.hmark.com

Product SDS

***Reference date:**5/27/2015* ***Revision date:** 10/10/2022*

01. Identification of the substance/mixture and of the company

Product name: Tube Brushes (Deligh Industries, Galvanized Stem Wire)

Code number(s): 4030, 4031, 4032, 4033, RB300105

Purpose of product: To assist in cleaning channels and lumens of cannulated items in conjunction with a suitable cleaning solution, according to the manufacturer's (Mfr.'s) IFU.

Manufacturer/supplier: Healthmark Industries Co.

Address: 18600 Malyn Blvd. / Fraser, MI 48026

Telephone/Fax/Email: (800) 521-6224 / (586) 491-2113 / healthmark@hmark.com

Emergency telephone number: (800) 424-9300 (24-hour service)

02. Hazardous identifications

Classification of the substance or mixture: N/A

Pigment: N/A

Adverse environmental and human health effects: Not hazardous per OSHA GSS 29 CFR 1910, 195, 1926. However, individual customer processes, such as welding, sawing, brazing, grinding, abrasive, blasting, and machining may result in the formation of fume, dust (combustible or otherwise), and/or particulate that may present the following hazards

H317- Dust/fumes many cause an allergic skin reaction, H351-Dust/fumes suspected of causing cancer via inhalation. H372- Inhalation of dust/fumes causes damage to respiratory tract through prolonged exposure or repeated exposure.

Precautionary Statements- P202- Do not handle until all safety precautions have been read and understood. P261- Avoid breathing dusts/fumes. P281- Use personal protective equipment as required. P308/P313- If exposed or concerned/get medical advice/attention.

Potential Health effects: Inhalation- Dusts may cause irritation of the nose, throat, and lungs. Excessive inhalation of metallic fumes and dusts may result in metal fume fever, an influenza-like illness. It is characterized by a sweet or metallic taste in the mouth, accompanied by dryness and irritation of the throat, cough, shortness of breath, pulmonary edema, general malaise, weakness, fatigue, muscle and joint pains, blurred vision, fever, and chills. Typical symptoms last from 12 to 48 hours.

Skin Contact: Dusts or particulates may cause mechanical irritation due to abrasion. Coated steel may cause skin irritation in sensitive individuals. Some components in this product are capable of causing an allergic reaction, possibly resulting in burning itching and skin eruptions. Contact with heated material may cause thermal burns.

Eye Contact: Dust or particulates may cause mechanical irritation including pain, tearing, and redness. Scratching in the cornea can occur if eye is rubbed. Fumes may be irritating. Contact with heated material may cause thermal burns.

Ingestion: Not expected to be acutely toxic via ingestion based on the physical and chemical properties of the product. Swallowing excessive amounts of the dust may cause irritation, nausea, and diarrhea.

Medical conditions aggravated by exposure: Diseases of the skin such as eczema may be aggravated by exposure. Disorders of the respiratory system including asthma, bronchitis, and emphysema may be aggravated by exposure. Long-term inhalation exposure to agents that cause pneumoconiosis may act synergistically with inhalation of oxide fumes or dusts of this products.

03. Composition/information on ingredients

Description of the mixture:	CAS #:	% by Weight
Iron Oxide	7439-89-6	99
Manganese	7439-96-5	0.22-1.6
Carbon	7440-44-0	0.04-0.85
Boron	7440-42-8	0.2-0.8
Chromium	7440-47-3	0.04-0.95
Silicon	7440-21-3	0.04-0.6
Nickel	7440-02-0	0.05-0.49
Copper	7440-50-8	0.06-0.45
Molybdenum	7439-98-7	0.01-0.23
Vanadium	7440-62-2	0.01-0.06
Aluminum	7429-90-5	<1
Sulfur	7704-34-9	0.01-0.04
Tin	7440-31-5	0.01-0.04
Nitrogen	7727-37-9	0.003-0.012
Niobium	7440-03-1	0.001-0.04
Phosphorus	7723-14-0	0.005-0.03
Thallium	7440-28-0	0.001-0.002
Antimony	7440-36-0	<1
Arsenic	7440-38-2	<1
Barium	7440-39-3	<1
Beryllium	7440-41-7	<1

Chemical Name	CAS Number	%(weight)
Cadmium	7440-43-9	<1
Lead	7439-92-1	<1
Mercury	7439-97-6	<1
Selenium	7782-49-2	<1
Silver	7440-22-4	<1
Zinc	7440-66-6	<1

Hazardous ingredients: OSHA hazards- Carcinogen/Skin Sensitizer/Target organ effect-Lungs
GHS Classification- Carcinogenicity (Category 2)/ Skin Sensitization (Category 1)/ Specific Target Organ /Toxicity-Repeated Exposure (Category 1).

04. First Aid Measures

General information: N/A

Following inhalation: In case of overexposure to dusts or fumes, remove to fresh air. Get immediate medical attention if symptoms described in the SDS.

Following skin contact: In case of overexposure to dusts or particulates, wash with soap and plenty of water. Get medical attention if irritation develops or persists. If thermal burn occurs, flush area with cold water and get immediate medical attention.

Following eye contact: In case of overexposure to dusts or fumes immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation develops or persists. If thermal burn occurs, flush area with cold water and get immediate medical attention.

Following ingestion: Not considered an ingestion hazard. However, if excessive amounts of dusts or particulates are swallowed, treat symptomatically and supportively. Get medical attention.

Notes for the doctor: N/A

05. Firefighting measures

Suitable extinguishing media: For molten, use dry powder or sand. DO NOT USE WATER ON MOLTEN METAL. For steel dust, used dry sand, water, foam, argon, or nitrogen.

Unsuitable extinguishing media: DO NOT USE WATER ON MOLTEN METAL. DO NOT USE CARBON DIOXIDE (CO^2).

Special hazards arising from the substance and combustion products: Metal fumes and noxious gases may be produced when heated.

Advice for firefighters: DO NOT USE WATER ON MOLTEN METAL. DO NOT USE CARBON DIOXIDE (CO^2). Firefighters should not enter confined spaces without wearing NIOSH/MSHA approved positive pressure breathing apparatus (SCBA) with full face mask and full protective equipment.

Firefighting Equipment: DO NOT USE WATER ON MOLTEN METAL. DO NOT USE CARBON DIOXIDE (CO^2). Use standard firefighting procedures and consider the hazards of other involved materials.

General Fire Hazards: Steel products do not present explosion hazards under normal conditions. Any non-oxidized fine metal particulates/dust generated by grinding, sawing, abrasive blasting, or individual customer processes may produce materials that the customer should test for combustibility and other hazards in accordance with applicable regulations. High concentration of combustible metallic fines in the air may present an explosion hazard.

06. Accidental release measures

General information: Emergency response is unlikely unless in the form of combustible dust. Avoid inhalation, eye, or skin contact of dusts by using appropriate precautions outlined in this SDS (see Section 8). Specific standards and regulations may be applicable to materials generated by individual customer processes. As appropriate, these standards and regulations should be consulted for applicability.

Environmental precautions: Prevent materials from entering drains, sewers, or waterways.

Additional information: Fine turnings and small chips should be swept or vacuumed and placed into appropriate disposable containers. Fine dust or powder should be kept away from ignition sources. Scrap should be reclaimed for recycling.

07. Handling and storage

Precautions for safe handing: Store away from strong oxidizers. Dust and/or powders, alone or combined with process specific fluids, may form explosive mixtures with air. Avoid breathing dusts or fumes. Applicable Federal, State, and Local laws and regulations may require testing dust generated from processing of steel products to determine if it represents a fire or explosion hazard and to determine appropriate protection methods.

Fire Preventions: N/A

Technical measures and storage conditions: Store away from strong oxidizers.

08. Exposure controls/personal protection

Control parameters: Operations with potential for generating high concentrations of airborne particulates or fumes should be evaluated and controlled as necessary.

Personal protective equipment: Wear appropriate thermal protective clothing, when necessary.

Hand protection: Appropriate protective gloves should be worn as necessary.

Respiratory protection: NIOSH/MSHA approved dust/fume/mist respirator should be used to avoid excessive exposure. See Section 3 for component material information exposure limits. If concentrations are sufficiently high that this respiratory is inadequate, or high enough to cause oxygen deficiency, use a positive pressure self-contained breathing apparatus (SCBA). Follow all applicable respirator use, fitting, and training standards and regulations.

Eye protection: Use safety glasses. Dust resistant safety googles are recommended under circumstances where particles could cause mechanical injury such as grinding or cutting. Face shield should be used when welding or cutting.

Advice on general occupational hygiene: Good personal hygiene should be followed including cleansing exposed skin with soap and water and laundering soiled work clothing. Always observe good personal hygiene measures, such as washing after handling the materials and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Environmental exposure controls: See occupational limits below-

Component	Type	Value	Form
Iron	PEL	10 mg/m^3	Dust/Fume
Manganese	CEILING	5 mg/m^3	Fume
Carbon		Not Established	
Boron	PEL	15 mg/m^3	Oxide Dust
Chromium	PEL	1 mg/m^3	Metal
Silicon	PEL	15 mg/m^3	Dust
Nickel	PEL	1 mg/m^3	Metal/Insoluble
Copper	PEL	1 mg/m^3	Dust
	PEL	0.1 mg/m^3	Fume

Component	Type	Value	Form
Molybdenum	PEL	15 mg/m^3	Insoluble Compounds
Vanadium	CEILING	0.5 mg/m^3	Oxide Dust
	CEILING	0.1 mg/m^3	Oxide Fume
Aluminum	PEL	15 mg/m^3	Dust
	PEL	5 mg/m^3	Respirable Fraction
Sulfur	PEL	13 mg/m^3	Sulfur Dioxide
Tin	PEL	2 mg/m^3	Inorganic Compound
Nitrogen			Simple Asphyxiant
Niobium		Not Established	
Phosphorus	PEL	0.1 mg/m^3	Phosphorus
Thallium	PEL	0.1 mg/m^3	Thallium
Antimony	PEL	0.5 mg/m^3	Antimony
Arsenic	PEL	0.01 mg/m^3	Arsenic
Barium	PEL	0.5 mg/m^3	Barium
Beryllium	PEL	0.002 mg/m^3	Beryllium
	CEILING	0.005 mg/m^3	Beryllium
Cadmium	PEL	0.005 mg/m^3	Cadmium
	AL	0.0025 mg/m^3	Cadmium
Lead	PEL	0.05 mg/m^3	Dust/Fume
Mercury	CEILING	1 mg/10 m^3	Mercury
Selenium	PEL	0.2 mg/m^3	Selenium
Silver	PEL	0.1 mg/m^3	Metal
Zinc	PEL	5 mg/m^3	Oxide Fume
	PEL	10 mg/m^3	Oxide Dust

09. Physical and chemical properties

Appearance: N/A

Physical state: Solid

Color: Silver grey to grey black with metallic luster.

Odor: N/A

Safety relevant basic data: N/A

Explosion hazard: N/A

Density: N/A

pH: N/A

Initial boiling point/range: ºC /ºF N/A

Solubility: Insoluble

Flash point: ºC /ºF N/A

Ignition temperature: ºC /ºF N/A

Melting point: Approximately 1538 ºC / 2800 ºF Not applicable

Conditions to avoid: N/A

Incompatible materials: N/A

10. Stability and reactivity

Conditions to avoid: Contact with incompatible materials.

Reactivity: This product is stable and non-reactive under normal conditions of use, storage, and transport.

Possibility of hazardous reactions: Steel at temperatures above the melting point may release fumes containing oxides of iron and alloying elements. Avoid generation of airborne fumes.

Chemical stability: Material is stable under normal conditions.

Incompatible materials: Reacts with strong acids to form hydrogen gas. Do not store near strong oxidizers.

Hazardous decomposition products: Metallic fumes may be produced during welding, burning, grinding, and possibly machining or any station with the potential for thermal decomposition.

11. Toxicological information

Information on toxicological effects: The primary component of this product is iron. Long-term exposure to iron dusts or fumes can result in a condition called siderosis, which is considered to be a benign pneumoconiosis. Symptoms may include chronic bronchitis, emphysema, and shortness of breath upon exertion. Penetration of iron particles in the skin and eye may cause an exogenous or ocular siderosis which may be characterized by a red-brown pigmentation of the affected area. Ingestion overexposures to iron may affect the gastrointestinal, nervous, and hematopoietic system and the liver. Iron and steel founding, but not iron or iron oxide, has been listed as carcinogenic (Group 1) by IARC.

When this product is welded, fumes are generated. Welding fumes may be different in composition from the original welding product, with the chief component being ordinary oxides of the metal being welded. Chronic health effects (including cancer) have been associated with the fumes and dusts of individual component metals and welding fumes as a general category have been listed by IAARC as a carcinogen (Group 2B). There is also limited evidence that welding fumes may cause adverse reproductive and fetal effects. Evidence is stronger where welding materials contain known reproductive toxins, e.g., lead which may be present in this material.

Breathing fumes or dust of this product may result in in metal fume fever, which is an illness produced by inhaling metal oxides. These oxides are produced by heating various metal including Cadmium, Zinc, Magnesium, Copper, Antimony, Nickel, Cobalt, Manganese, Tin, Lead, Beryllium, Silver, Chromium, Aluminum, Selenium, Iron and Arsenic. The most common agents involved are Zinc and Copper.

This product may contain small amount of Manganese. Prolonged exposure to Manganese dusts or fumes is associated with “magnesium”, a Parkinson-like syndrome characterized by a variety of neurological symptoms including muscle spasms, gait disturbances, tremors, and psychoses.

This product may contain small amounts of Cadmium. Primary target organs for Cadmium overexposure are the lung and kidney. Because of its cumulative nature, chronic Cadmium poisoning can cause serious disease which takes many years to develop and may continue to progress despite cessation of exposure. Progression of the disease may not reflect current exposure conditions. It is also capable of causing a painful osteomalacia called "Itai-Itai" in postmenopausal women and has caused developmental effects and/or reproductive effects in make and female animals. Cadmium is a listed carcinogen by NTP, OSHA, and IARC (Group1).

This product may contain small amounts of Chromium. Prolonged and repeated overexposure to Chromium dusts and fumes may cause skin ulcers, nasal irritation and ulceration, kidney damage and cancer of the respiratory system. Chromium is a skin sensitizer. Cancer is generally attributed to the hexavalent for Chromium which is listed as a carcinogen by NTP and IARC (Group 1).

This product may contain small amounts of Nickel. Prolonged and repeated contact with Nickel may cause sensitization dermatitis. Inhalation of Nickel compounds has caused lung damage as well as sinus, nasal and lung cancer in laboratory animals. Nickel is a listed carcinogen by NTP and IARC (Group 10).

This product may contain small amounts of Vanadium. Adverse effects from dermal, inhalation or parenteral exposure to various Vanadium compounds have been reported. The major target for Vanadium Pentoxide toxicity is the respiratory tract. Fumes or dust can cause severe eye and respiratory tract. Chronic bronchitis, green tongue, conjunctivitis, pharyngitis, rhinitis, rales, chronic productive cough, and tightness of the chest have been reported following overexposure. Allergic reactions resulting from skin and inhalation exposures have also been reported. A statistical association between Vanadium air levels and lung cancer has been suggested, but Vanadium currently is not regarded as a human carcinogen.

This product may contain small amounts of Lead. Lead can accumulate in the body. Consequently, exposure to fumes or dust may produce signs of polyneuritis, diminished vision, and peripheral neuropathy, such as tingling and loss of feeling in fingers, arms, and legs. Lead is a known reproductive and developmental toxin. It is also associated with central nervous system disorders, anemia, kidney dysfunction and neurobehavioral abnormalities. The brain is a major target organ for lead exposure. Elemental lead is listed as a IAAC 2B carcinogen.

The product may contain small amounts of copper. Copper dust and fumes can irritate the eyes, nose and throat causing coughing, wheezing, nosebleeds, ulcers, and metal fume fever. Other effects from repeated inhalation of copper fumes include a metallic or sweet taste, and discoloration of skin, teeth, or hair. Copper may cause an allergic skin reaction. Overexposure to copper can affect the liver.

Irritation: Dust may irritate skin and eyes.

Sensitization: Expected to be a low ingestion hazard.

Inhalation: Dust and/or fumes generated during welding, burning, grinding and possibly machining may irritate respiratory system.

Practical experiences: N/A

Ingredient: N/A

12. Ecological information

Terrestrial toxicity: No data available

Aquatic toxicity: N/A

Mobility: N/A

Persistence and degradability: N/A

Bio accumulative potential: N/A

Results of PBT and vPvB assessment: N/A

Other adverse effects: N/A

13. Disposal considerations

Product: Please refer to applicable local, state, and federal regulations.

Contaminated packaging: N/A

Uncontaminated packaging: N/A

14. Transport information

UN-No: N/A

Proper shipping name: N/A

Classification code: N/A

Packing group: N/A

Hazard label: N/A

15. Regulatory information

Material safety evaluation:

Regulation on combustible liquids: U.S Federal Regulations- This product is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200. However, dusts and fumes from this product may be combustible or hazardous and require protection to comply with applicable Federal, State, and local laws and regulations.

California Proposition 65	This product contains chemicals (antimony, arsenic, beryllium, chromium, cadmium, lead, nickel) known to the State of California to cause cancer and chemicals (cadmium, lead) known to the State of California to cause birth defects or reproductive harm.
Massachusetts Substance List	Aluminum, Antimony, Arsenic, Beryllium, Boron, Cadmium, Chromium, Copper, Lead, Magnesium, Manganese, Molybdenum, Nickel, Nitrogen, Phosphorus, Selenium, Silicon, Sulfur, Tin, Vanadium, Zinc.

Pennsylvania Hazardous Substance	Aluminum, Antimony, Arsenic, Beryllium, Boron, Cadmium, Chromium, Copper, Lead, Magnesium, Manganese, Molybdenum, Nickel, Nitrogen, Phosphorus, Selenium, Silicon, Sulfur, Tin, Vanadium, Zinc.
New Jersey Hazardous Substance	Aluminum, Antimony, Arsenic, Beryllium, Boron, Cadmium, Chromium, Copper, Lead, Magnesium, Manganese, Molybdenum, Nickel, Nitrogen, Phosphorus, Selenium, Silicon, Sulfur, Tin, Vanadium, Zinc.
Toxic Substances Control Act	Components of this product are listed on the Toxic Substances Control Act.
Comprehensive Environmental Response, Compensation and Liability Act	Steel is not reportable, however, it contains hazardous substances that may be reportable if released in pieces with diameters less than or equal to 0.004 inches. An (*) denotes the Reportable Quantity.

Chemical Name	**Reportable Quantity (lb)**
Antimony	**5000***
Arsenic	**1***
Beryllium	**10***
Cadmium	**10***
Chromium	**5000***
Copper	**5000***
Lead	**10***
Nickel	**100***
Phosphorus	**1**
Selenium	**100***
Zinc	**1000***

Superfund Amendments and Reauthorization Act of 1986

Section 313 Reportable Ingredients

Chemical Name	**Reportable**
Aluminum	**No – less than 1%**
Antimony	**No – less than 1%**
Arsenic	**No – less than 1%**
Beryllium	**No – less than 1%**
Cadmium	**No – less than 1%**
Chromium	**Yes – greater than 1%**
Copper	**No – less than 1%**
Lead	**Yes**
Manganese	**Yes – greater than 1%**
Nickel	**Yes – greater than 1%**
Phosphorus	**No – less than 1%**

Selenium	**No – less than 1%**
Vanadium	**No – less than 1%**
Zinc	**No – less than 1%**

Class according 2009/104/EG (BetrSichV): N/A

Water hazard class: N/A

Storage according TRGS 510 (Storage of hazardous substances in non-stationary containers): N/A

16. Other information

Recommended application: Store in cool place. Do not store above 104ºF (40ºC). Shield from direct sun exposure or fluorescent lighting to prevent discoloration. Do not store in areas that are damp or in high humidity.

This SDS covers Galvanized Wire product delivered from the Deligh facility but does not include chemicals that may be applied by subsequent handlers and/or distributors of this product. This could include a variety of materials including oils, paints, galvanization, etc. that are not listed in the SDS. SDSs for an Deligh applied specialty coating will be provided separately. During welding, precautions should be taken for airborne contaminants that may originate from components of the welding rod. Arc or spark generated when welding or burning could be a source of ignition for combustible and/or flammable materials. The information in this Safety data sheet was obtained from sources which we believe are reliable, however, the information is provided without any representation or warranty, expressed or implied, regarding accuracy or correctness. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and maybe beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage, or expense arising out of or in any way connected with the handling, storage, use or disposal of this product.

Relevant R-, H-, and EUH-phrases: N/A

The information supplied in this Safety Data Sheet is designed only as a guidance for the safe use, storage, and handling of the product. This information is correct to the best of our knowledge and beliefs at the date of the publication however no guarantee is made to its accuracy. This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other processes.