Safety Data Sheet

Issue date 18-May-2018 **Revision date** 30-Sep-2019 **Revision Number** 2

1. IDENTIFICATION

Product identification

Product identifier	Certanium® 707 Dissimilar Steel Stick Rod Electrode
Other means of identification	P12565
Recommended use	Welding Alloy
Restrictions on use	For industrial use only

Supplier

Corporate Headquarters:
Cronatron, A Lawson Brand
Lawson Products, Inc.
8770 W.Bryn Mawr Ave.- Suite 900
Chicago, IL 60631
1-866-529-7664

Canadian Distribution Center:
Lawson Canada
7315 Rapistan Court
Mississauga, ON L5N 5Z4
(800) 323-5922

24 Hour Emergency Phone Number (888) 426-4851 (Prosar)

Website https://www.lawsonproducts.com

2. HAZARD(S) IDENTIFICATION

Hazard Classification This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), WHMIS 2015 and GHS Regulations.

Skin sensitization	Category 1
Carcinogenicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 1

Symbol

Signal word DANGER

Hazard statements
H317 - May cause an allergic skin reaction
H351 - Suspected of causing cancer
H372 - Causes damage to organs through prolonged or repeated exposure

Precautionary statements

General Do not use in areas without adequate ventilation. See ANSI Z49.1 - Safety in Welding, Cutting, and Allied Processes published by the American Welding Society or CSA W117.2 - Safety in Welding, Cutting, and Allied Processes published by the Canadian Standards Association.

Prevention
P285 - In case of inadequate ventilation wear respiratory protection
P280 - Wear protective gloves/protective clothing and eye/face protection
P202 - Do not handle until all safety precautions have been read and understood
P260 - Do not breathe dust/fume/gas/mist/vapors/spray

Response

General P314 - Get medical advice/attention if you feel unwell.

Eyes P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Skin
P335 - Brush off loose particles from skin
P352 - Wash with plenty of soap and water
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P280 - Wear protective gloves/protective clothing/eye protection/face protection

Inhalation
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P260 - Do not breathe fumes
P285 - In case of inadequate ventilation wear respiratory protection

Ingestion P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician

Fire Evacuate area

Spill Not applicable

Storage Store in accordance with local regulations

Disposal P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Hazard(s) Not Otherwise Classified (HNOC)

Not available.

Physical Hazards Not Otherwise Classified (PHNOC)

Not available.

Unknown acute toxicity

Not available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Composition

.

Chemical name	CAS-No	Weight %
Iron	7439-89-6	38-40
Chromium	7440-47-3	20-22
Titanium dioxide	13463-67-7	7-9
Nickel		

	7440-02-0	7-9
Sodium Silicate	1344-09-8	2-4
Potassium Silicate	1312-76-1	2-4
Manganese	7439-96-5	2-4
Lithium Silicate	12627-14-4	2-4
Feldspar	68476-25-5	2-4
Calcium Fluoride	7789-75-5	2-4
Calcium Carbonate	1317-65-3	2-4
Aluminum Lithium Silicate	12068-40-5	2-4
Silver	7440-22-4	0.1-0.5
Copper	7440-50-8	0.1-0.5
Aluminum	7429-90-5	0.1-0.5

4. FIRST-AID MEASURES

Necessary first-aid measures

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Rest in a half upright position, and loosen clothing. If breathing is difficult, administer oxygen. If breathing has stopped, give artificial respiration. Seek medical advice after significant exposure.

Ingestion

Call a physician or Poison Control Center immediately.

Skin contact

Wash off immediately with soap and plenty of water. If rash develops, see a physician. For skin burns from arc radiation, promptly flush with cold water. Get medical attention for burns or irritations that persist.

Eye contact

Flush with plenty of water for at least 15 minutes. Get medical attention if symptoms occur. For radiation burns due to arc flash, see physician.

Most important symptoms (acute)

Discomfort such as metal fume fever, dizziness, nausea, or dryness or irritation of nose, throat, or eyes. PRIMARY ROUTE OF ENTRY is the respiratory system. IRON, IRON OXIDE, MANGANESE - Remove from overexposure and apply artificial respiration if needed. CHROMIUM- Inhalation of chromium can cause irritation of nasal membranes and skin. FLUORIDES - Fluoride compounds produced may cause eye and skin burns, and pulmonary edema bronchitis. Exposure to extremely high levels of fluorides can cause abdominal pain, diarrhea, muscular weakness, and convulsions. In extreme cases it can cause loss of consciousness and death. NICKEL, NICKEL OXIDE - May cause metallic taste, nausea, tightness in chest, fever, and allergic reactions.

Most important symptoms (over-exposure)

May lead to siderosis (iron deposits in lungs) and is believed by some investigators to affect pulmonary functions. PRIMARY ROUTE OF ENTRY is the respiratory system. IRON, IRON OXIDE - Long term overexposure to iron fumes can cause deposits of iron in the lungs (siderosis). Lungs will clear in time when exposure to iron and its compounds cease. MANGANESE - Long term exposure may lead to "Manganism." Central nervous system is affected and symptoms include muscular weakness, impaired speech, impaired movement, and tremors. Exposed workers should get quarterly medical examinations for manganism. Bronchitis and some lung fibrosis have been reported. FLUORIDES - Overexposure to fluorides can cause serious bone erosion, excessive calcification of the bone and calcification of the ribs, pelvis and spinal column. May cause skin rash. NICKEL, NICKEL OXIDE - Long term overexposure to nickel products may cause lung fibrosis or pneumoconiosis. Long term overexposure to HEXAVALENT CHROMIUM (CrVI) is reported to cause lung cancer in humans.

Indication of any immediate medical attention and special treatment needed

In case of ELECTRIC SHOCK: Disconnect and turn off the power. Use a nonconductive material to pull victim away from contact with live wire parts or wires. If breathing has stopped, begin artificial respiration and obtain medical assistance immediately. If no detectable pulse, begin Cardiopulmonary Resuscitation. (CPR) and immediately call for

medical aid.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media

Not available.

Specific hazards

Fuel gas torches and soldering irons used for welding, brazing and soldering can ignite combustibles. Welding arc and sparks can ignite combustibles. Refer to American National Standard Z49.1 for fire prevention during welding.

Special protective equipment for fire-fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Wear protective gloves and protective clothing. Solid objects may be picked up and placed in a container. Make sure the solid objects are at room temperature before handling.

Methods and materials for containment and cleaning up

Do not flush residue into waterways.

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid breathing dusts and fumes from burning materials. Do not ingest. Handle with care to avoid cuts and prevent the wire from piercing the skin. Wear gloves. Some individuals may develop an allergic reaction to certain materials. Keep all warning and identification labels on the product.

Conditions for safe storage, including any incompatibilities

Do not store in unlabeled or mislabeled containers. Keep material sealed and dry before use. After using, keep remaining product sealed and dry and do not remove product identification label or warning label.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	OSHA PEL (TWA)	ACGIH OEL (TWA)	NIOSH - TWA
Iron	-	-	-
Chromium	1 mg/m³ TWA	0.5 mg/m³ TWA	0.5 mg/m³ TWA
Titanium dioxide	15 mg/m³ TWA	10 mg/m³ TWA	2.4 mg/m³ TWA 0.3 mg/m³ TWA
Nickel	1 mg/m³ TWA	1.5 mg/m³ TWA	0.015 mg/m³ TWA 0.015 mg/m³ TWA
Sodium Silicate	-	-	-
Potassium Silicate	-	-	-
Manganese	5 mg/m³ Ceiling	0.02 mg/m³ TWA 0.1 mg/m³ TWA	3 mg/m³ STEL 1 mg/m³ TWA 1 mg/m³ TWA
Lithium Silicate	-	-	-
Feldspar	-	-	-
Calcium Fluoride	2.5 mg/m³ TWA	2.5 mg/m³ TWA	2.5 mg/m³ TWA
Calcium Carbonate	15 mg/m³ TWA 5 mg/m³ TWA	-	10 mg/m³ TWA 5 mg/m³ TWA
Aluminum Lithium Silicate	-	-	-

Chemical name	OSHA PEL (TWA)	ACGIH OEL (TWA)	NIOSH - TWA
Silver	0.01 mg/m³ TWA	0.1 mg/m³ TWA	0.01 mg/m³ TWA
Copper	0.1 mg/m³ TWA 1 mg/m³ TWA	0.2 mg/m³ TWA 1 mg/m³ TWA	1 mg/m³ TWA 0.1 mg/m³ TWA 1 mg/m³ TWA
Aluminum	15 mg/m³ TWA 5 mg/m³ TWA	1 mg/m³ TWA	10 mg/m³ TWA 5 mg/m³ TWA 5 mg/m³ TWA 5 mg/m³ TWA

Appropriate engineering controls

Read and understand the manufacturer's instructions and precautionary label on this product.Always use adequate ventilation and wear appropriate personal protection. Do not breathe welding fumes and gases; they are dangerous to your health.See American National Standard Z49.1, Safety in Welding and Cutting, published by the "American Welding Society," 550 N.W. LeJeune Road, Miami, FL 33126 and OSHA Publication 2206 (29CFR 1910), U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954 for more detail on the following:
ENGINEERING CONTROLS: Proper ventilation must be maintained.ARC RAYS and SPARKS can injure eyes and burn skin. ELECTRIC SHOCK can kill! Wear correct hand, eye, head, and body protection.
VENTILATION: Use enough ventilation, local exhaust at the arc, or both, to keep the fumes and gases below the TLV's in the workers breathing zone and the general area. Train the welder to keep their head out of the fumes. Monitor fume levels and do not exceed permissible exposure limits or values.
RESPIRATORY PROTECTION: Use respirable fume respirator or air supplied respirator when welding in a confined space or where local exhaust or ventilation does not keep exposure below the TLV's.
EYE PROTECTION: Wear a helmet or face shield with a filter lens of shade 12 or darker. Provide screens and flash goggles to shield others.
PROTECTIVE CLOTHING: Wear head, hand, and body protection which help to prevent injury from radiation, sparks, and electrical shock. See ANSI Z49.1. At a minimum, this includes welders' gloves and a protective face shield and may include arm protectors, aprons, hats, shoulder protection, as well as dark substantial clothing. Train the welder not to touch live electrical parts and to insulate themselves from work and ground, especially if clothing and gloves are wet.
WORK HYGIENIC PRACTICES: Do not eat or consume beverages in the work area.
EXPOSURE GUIDELINES: Use industrial hygiene monitoring equipment to ensure that exposure does not exceed applicable national exposure limits. When the electrode is consumed, fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section 3. The fume and decomposition products, not the ingredients in the electrode, are important. Decomposition products include those originating from the volatilization, reaction, or oxidation of materials in Section 3, plus those from the base metal, etc., as noted above. These components are virtually always present as complex oxides and not as metals (Characterization of Arc Welding Fume: American Welding Society). Reasonably expected fume constituents of the fume could include complex oxides of iron, manganese, chromium and nickel`.

Individual protection measures, such as personal protective equipment

Eye protection

Wear helmet or face shield with filter lens. As a rule of thumb, start with a shade which is too dark to see the work area. Then go to the next lighter shade which gives sufficient view of the work area.

Skin and body protection

Wear head, hand, and body protection which help to prevent injury from radiation, sparks, and electrical shock. See ANSI Z49.1. At a minimum, this includes welders' gloves and a protective face shield and may include arm protectors, aprons, hats, shoulder protection, as well as dark substantial clothing. Train the welder not to touch live electrical parts and to insulate themselves from work and ground, especially if clothing and gloves are wet.

Respiratory protection

Use respirable fume respirator or air supplied respirator when welding in a confined space

or where local exhaust or ventilation does not keep exposure below the TLV's.

Hygiene measures

Wash hands after handling the product. Use industrial hygiene monitoring equipment to ensure that exposure does not exceed applicable national exposure limits. When the electrode is consumed, fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section 3. The fume and decomposition products, not the ingredients in the electrode, are important. Decomposition products include those originating from the volatilization, reaction, or oxidation of materials in Section 3, plus those from the base metal, etc., as noted above. These components are virtually always present as complex oxides and not as metals (Characterization of Arc Welding Fume: American Welding Society). Reasonably expected fume constituents of the fume could include complex oxides of iron, manganese, chromium and nickel. When using, do not eat, drink or smoke.

Canadian Province Occupational Exposure Limits

Chemical name	Alberta OEL	British Columbia OEL	Manitoba OEL	New Brunswick - OEL	Newfoundland & Labrador - OEL	Nova Scotia - OEL	Ontario OEL	Prince Edward Island - OEL	Quebec OEL	Saskatchewan - OEL
Iron	-	-	-	-	-	-	-	-	-	-
Chromium	0.5 mg/m³ TWA	0.5 mg/m³ TWA	0.5 mg/m³ TWA	0.5 mg/m³ TWA	0.5 mg/m³ TWA	0.5 mg/m³ TWA	0.5 mg/m³ TWA	0.5 mg/m³ TWA	0.5 mg/m³ TWAEV	1.5 mg/m³ STEL 0.5 mg/m³ TWA
Titanium dioxide	10 mg/m³ TWA	10 mg/m³ TWA 3 mg/m³ TWA	10 mg/m³ TWA	10 mg/m³ TWA	10 mg/m³ TWA	10 mg/m³ TWA	10 mg/m³ TWA	10 mg/m³ TWA	10 mg/m³ TWAEV	20 mg/m³ STEL 10 mg/m³ TWA
Nickel	1.5 mg/m³ TWA	0.05 mg/m³ TWA	1.5 mg/m³ TWA	1 mg/m³ TWA	1.5 mg/m³ TWA	1.5 mg/m³ TWA	1 mg/m³ TWA	1.5 mg/m³ TWA	1 mg/m³ TWAEV	3 mg/m³ STEL 1.5 mg/m³ TWA
Sodium Silicate	-	-	-	-	-	-	-	-	-	-
Potassium Silicate	-	-	-	-	-	-	-	-	-	-
Manganese	0.2 mg/m³ TWA	0.2 mg/m³ TWA 0.02 mg/m³ 0.2 mg/m³ TWA 0.02 mg/m³	0.02 mg/m³ TWA 0.1 mg/m³ TWA	0.2 mg/m³ TWA	0.02 mg/m³ TWA 0.1 mg/m³ TWA 0.02 mg/m³ TWA 0.1 mg/m³ TWA	0.02 mg/m³ TWA 0.1 mg/m³ TWA	0.2 mg/m³ TWA 0.02 mg/m³ TWA 0.1 mg/m³ TWA	0.02 mg/m³ TWA 0.1 mg/m³ TWA 0.02 mg/m³ TWA 0.1 mg/m³ TWA	0.2 mg/m³ TWAEV 0.2 mg/m³ TWAEV	0.6 mg/m³ STEL 0.2 mg/m³ TWA 0.2 mg/m³ TWA
Lithium Silicate	-	-	-	-	-	-	-	-	-	-
Feldspar	-	-	-	-	-	-	-	-	-	-
Calcium Fluoride	2.5 mg/m³ TWA	2.5 mg/m³ TWA	2.5 mg/m³ TWA	2.5 mg/m³ TWA	2.5 mg/m³ TWA	2.5 mg/m³ TWA	2.5 mg/m³ TWA	2.5 mg/m³ TWA	2.5 mg/m³ TWAEV	5 mg/m³ STEL 2.5 mg/m³ TWA
Calcium Carbonate	10 mg/m³ TWA	20 mg/m³ STEL 10 mg/m³ TWA 3 mg/m³ TWA	-	10 mg/m³ TWA	-	-	-	-	10 mg/m³ TWAEV	20 mg/m³ STEL 10 mg/m³ TWA
Aluminum Lithium Silicate	-	-	-	-	-	-	-	-	-	-
Silver	0.1 mg/m³ TWA	0.03 mg/m³ STEL 0.01 mg/m³ TWA 0.01 mg/m³ TWA	0.1 mg/m³ TWA	0.1 mg/m³ TWA	0.1 mg/m³ TWA	0.1 mg/m³ TWA	0.1 mg/m³ TWA	0.1 mg/m³ TWA	0.1 mg/m³ TWAEV	0.3 mg/m³ STEL 0.1 mg/m³ TWA
Copper	0.2 mg/m³ TWA 1 mg/m³	1 mg/m³ TWA 0.2 mg/m³	0.2 mg/m³ TWA 1 mg/m³ TWA	0.2 mg/m³ TWA 1 mg/m³	0.2 mg/m³ TWA 1 mg/m³ TWA	0.2 mg/m³ TWA 1 mg/m³ TWA	0.2 mg/m³ TWA 1 mg/m³	0.2 mg/m³ TWA 1 mg/m³ TWA	0.2 mg/m³ TWAEV 1 mg/m³	0.6 mg/m³ STEL 3 mg/m³

Chemical name	Alberta OEL	British Columbia OEL	Manitoba OEL	New Brunswick - OEL	Newfoundland & Labrador - OEL	Nova Scotia - OEL	Ontario OEL	Prince Edward Island - OEL	Quebec OEL	Saskatchewan - OEL
	TWA	TWA		TWA			TWA		TWAEV	STEL 0.2 mg/m³ TWA 1 mg/m³ TWA
Aluminum	10 mg/m³ TWA 5 mg/m³ TWA	1.0 mg/m³ TWA	1 mg/m³ TWA	10 mg/m³ TWA 5 mg/m³ TWA	1 mg/m³ TWA	1 mg/m³ TWA	1 mg/m³ TWA	1 mg/m³ TWA	10 mg/m³ TWAEV 5 mg/m³ TWAEV 5 mg/m³ TWAEV	20 mg/m³ STEL 10 mg/m³ STEL 10 mg/m³ TWA 5 mg/m³ TWA

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state Solid

Color Silver

Odor None

Odor threshold Not applicable

pH Not applicable

Melting point/range °C > 1000 °C

Melting point/range °F > 1800 °F

Boiling point/range °C Not applicable

Boiling point/range °F Not applicable

Flash point °C Not Applicable

Flash point °F Not Applicable

Flash point method used Not applicable

Evaporation rate Not applicable

Flammability (Solid, Gas) Not available

Lower explosion limit Not applicable

Upper explosion limit Not applicable

Vapor pressure Not applicable

Vapor density Not applicable

Relative density Not available

Solubility insoluble

Partition coefficient (n-octanol/water)	Not applicable
Autoignition temperature °C	Not applicable
Autoignition temperature °F	Not applicable
Decomposition temperature °C	Not available
Decomposition temperature °F	Not available
Viscosity	Not applicable

10. STABILITY AND REACTIVITY

Reactivity

Contact with chemical substances like acids or strong bases could cause generation of gas.

Chemical stability

Stable under normal conditions.

Possibility of hazardous reactions

Gaseous reaction products may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may also be formed by radiation from the arc. The fume limit for Cr VI (5 micrograms/m³) may be reached before the ACGIH recommended general welding fume limit of 5 mg/m³ is reached. Monitor fume levels and Cr VI level. Train workers about the hazards of Cr (VI). Read and comply with the OSHA permissible exposure limits for hexavalent chromium (CrVI), Fed. Reg. 71 – 10099 (specifically 29 CFR 1910.1026, 29 CFR 1915.1026, and 29 CFR 1926.1126). For CrVI, OSHA requires: “The employer shall perform initial monitoring to determine the 8-hour TWA exposure for each employee on the basis of a sufficient number of personal breathing zone air samples to accurately characterize full shift exposure on each shift, for each job classification, in each work area”. Specialized equipment is required for monitoring Cr (VI) concentration in the workplace. OSHA Analytical Method Number ID-215 for area and breathing zone sampling and OSHA Analytical Method Number W4001 for wipe samples are listed on the OSHA website - www.osha.gov -as methods for measuring Cr(VI). This standard is complex and the employer should contact an occupational health professional for doing the Cr(VI) monitoring and all other fume monitoring.
Exposure limits are subject to change. Contact ACGIH, OSHA, NIOSH, and IARC for current values. The following limits can be used as guidance. Refer to Section 11 for more information about welding fumes. CAS Exposure Limit (mg/m³)SubstanceNUMBER
OSHA PEL ACGIH-TLV
Iron Oxide1309-37-1 10 (as Fe) 5 (as Fe)
Nitric Oxide10102-43-9 30 31
Chromium (VI) not listed 0.0050 .05 (as Cr VI)
Nickel Oxide #1313-99-1 1 (as Ni) 0.2 (as Ni)
Manganese fume #7439-96-5 5 0.02.

Conditions to avoid

Not available.

Incompatible materials

Incompatible with strong acids and bases.

Hazardous decomposition products

Gaseous reaction products may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may also be formed by radiation from the arc.Refer to applicable national exposure limits for the fume compounds. Reasonably expected fume constituents of the fume could include complex oxides of iron, chromium, nickel and manganese. The employer should contact an occupational health professional for doing fume monitoring to determine fumes emitted and to ensure compliance to the applicable country limits.Manganese also has a low exposure limit listed in the USA. Other country exposure limits may be different and the appropriate country standards should be used.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Dermal. Inhalation. Eyes.

Symptoms

POTENTIAL HEALTH EFFECTS: EYES: RADIATION: Arc rays from welding can injure eyes. HEAT and MOLTEN METAL can severely damage eyes.
SKIN: HEAT: Spatter and molten metal can cause burn injuries
ELECTRICITY: Electric shock can kill!
RADIATION from the arc: Skin cancer has been reported.
INGESTION: Not an expected route of entry, but if ingested product could cause serious injury.
INHALATION: FUMES: Overexposure to welding fumes may result in symptoms like metal fume fever,dizziness, nausea, dryness of the nose, throat or eyes. CARCINOGENICITY: CHROMIUM - Chromium VI is listed as being carcinogenic to humans on IARC and NTP lists, and is listed by NIOSH as being a potential occupational carcinogen (with no further categorization).
NICKEL - is listed as being carcinogenic to humans on IARC and NTP lists, and is listed by NIOSH as being a potential occupational carcinogen (with no further categorization).
TITANIUM DIOXIDE is listed as being unclassifiable as to Carcinogenicity in humans by IARC and is listed by NIOSH as being a potential occupational carcinogen (with no further categorization).
MANGANESE is listed by ACGIH as Group A4: Not classifiable as a human carcinogen.
WELDING FUMES (not otherwise specified) are considered to be carcinogenic defined with no further categorization by NIOSH and IARC.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

May lead to siderosis (iron deposits in lungs) and is believed by some investigators to affect pulmonary functions. PRIMARY ROUTE OF ENTRY is the respiratory system. IRON, IRON OXIDE - Long term overexposure to iron fumes can cause deposits of iron in the lungs (siderosis). Lungs will clear in time when exposure to iron and its compounds cease. MANGANESE - Long term exposure may lead to "Manganism." Central nervous system is affected and symptoms include muscular weakness, impaired speech, impaired movement, and tremors. Exposed workers should get quarterly medical examinations for manganism. Bronchitis and some lung fibrosis have been reported. FLUORIDES - Overexposure to fluorides can cause serious bone erosion, excessive calcification of the bone and calcification of the ribs, pelvis and spinal column. May cause skin rash. NICKEL, NICKEL OXIDE - Long term overexposure to nickel products may cause lung fibrosis or pneumoconiosis. Long term overexposure to HEXAVALENT CHROMIUM (CrVI) is reported to cause lung cancer in humans.

Numerical measures of toxicity

Chemical name	Inhalation LC50:	Dermal LD50:	Oral LD50:
Iron	-	-	= 30 g/kg (Rat)
Chromium	-	-	-
Titanium dioxide	-	-	> 10000 mg/kg (Rat)
Nickel	> 10.2 mg/L (Rat) 1 h	-	> 9000 mg/kg (Rat)
Sodium Silicate	-	> 4640 mg/kg (Rabbit)	= 1960 mg/kg (Rat)
Potassium Silicate	-	-	= 5700 mg/kg (Rat)
Manganese	-	-	= 9 g/kg (Rat)
Lithium Silicate	-	-	-
Feldspar	-	-	-
Calcium Fluoride	-	-	= 4250 mg/kg (Rat)
Calcium Carbonate	-	-	-
Aluminum Lithium Silicate	-	-	-
Silver	-	> 2000 mg/kg (Rat)	> 5000 mg/kg (Rat)
Copper	-	-	-
Aluminum	-	-	-

ATEmix (dermal) Not available

ATEmix (oral) Not available

ATEmix (inhalation-gas) Not available

ATEmix (inhalation-vapor) Not available

ATEmix (inhalation-dust/mist) Not available

Carcinogenicity

Chemical name	ACGIH OEL - Carcinogens	IARC	OSHA RTK Carcinogens	NTP
Iron	-	-	-	-
Chromium	A4	Group 3	-	-
Titanium dioxide	A4	Group 2B	Listed	-
Nickel	-	Group 1 Group 2B	Listed	Known Carcinogen Reasonably Anticipated Carcinogen
Sodium Silicate	-	-	-	-
Potassium Silicate	-	-	-	-
Manganese	A4	-	-	-
Lithium Silicate	-	-	-	-
Feldspar	-	-	-	-
Calcium Fluoride	A4	Group 3	-	-
Calcium Carbonate	-	-	-	-
Aluminum Lithium Silicate	-	-	-	-
Silver	-	-	-	-
Copper	-	-	-	-
Aluminum	A4	-	-	-

Canadian Province carcinogenicity limits

Chemical name	Alberta - Carcinogen	British Columbia - Carcinogen	Manitoba - Carcinogen	New Brunswick - Carcinogen	Nova Scotia - Carcinogen	Quebec - Carcinogen
Iron	-	-	-	-	-	-
Chromium	-	-	ACGIH A4	ACGIH A4	ACGIH A4	-
Titanium dioxide	-	IARC 2B	ACGIH A4	ACGIH A4	ACGIH A4	-
Nickel	-	IARC 2B	ACGIH A5	-	ACGIH A5	-
Sodium Silicate	-	-	-	-	-	-
Potassium Silicate	-	-	-	-	-	-
Manganese	-	-	ACGIH A4	-	ACGIH A4	-
Lithium Silicate	-	-	-	-	-	-
Feldspar	-	-	-	-	-	-
Calcium Fluoride	-	-	ACGIH A4	ACGIH A4	ACGIH A4	-
Calcium Carbonate	-	-	-	-	-	-
Aluminum Lithium Silicate	-	-	-	-	-	-
Silver	-	-	-	-	-	-
Copper	-	-	-	-	-	-
Aluminum	-	-	ACGIH A4	-	ACGIH A4	-

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish
Iron	-	13.6: 96 h Morone saxatilis mg/L LC50 static
Chromium	-	-
Titanium dioxide	-	-
Nickel	0.18: 72 h Pseudokirchneriella subcapitata mg/L EC50 0.174 - 0.311: 96 h Pseudokirchneriella subcapitata mg/L EC50 static	100: 96 h Brachydanio rerio mg/L LC50 10.4: 96 h Cyprinus carpio mg/L LC50 static 1.3: 96 h Cyprinus carpio mg/L LC50 semi-static
Sodium Silicate	-	301 - 478: 96 h Lepomis macrochirus mg/L LC50 3185: 96 h Brachydanio rerio mg/L LC50 semi-static
Potassium Silicate	-	301 - 478: 96 h Lepomis macrochirus mg/L LC50 3185: 96 h Brachydanio rerio mg/L LC50 semi-static
Manganese	-	-
Lithium Silicate	-	-
Feldspar	-	-
Calcium Fluoride	-	-
Calcium Carbonate	-	-
Aluminum Lithium Silicate	-	-
Silver	-	0.00155 - 0.00293: 96 h Pimephales promelas mg/L LC50 static 0.064: 96 h Lepomis macrochirus mg/L LC50 static 0.0062: 96 h Oncorhynchus mykiss mg/L LC50 flow-through
Copper	0.0426 - 0.0535: 72 h Pseudokirchneriella subcapitata mg/L EC50 static 0.031 - 0.054: 96 h Pseudokirchneriella subcapitata mg/L EC50 static	0.0068 - 0.0156: 96 h Pimephales promelas mg/L LC50 0.2: 96 h Pimephales promelas mg/L LC50 flow-through 0.3: 96 h Pimephales promelas mg/L LC50 static 0.3: 96 h Cyprinus carpio mg/L LC50 semi-static 0.052: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 0.112: 96 h Poecilia reticulata mg/L LC50 flow-through 1.25: 96 h Lepomis macrochirus mg/L LC50 static 0.8: 96 h Cyprinus carpio mg/L LC50 static
Aluminum	-	-

Persistence and degradability No data available.

Bioaccumulation

Chemical name	CAS-No	Partition coefficient (log Kow)
Iron 7439-89-6	7439-89-6	-
Chromium 7440-47-3	7440-47-3	-
Titanium dioxide 13463-67-7	13463-67-7	-
Nickel 7440-02-0	7440-02-0	-
Sodium Silicate 1344-09-8	1344-09-8	-

Chemical name	CAS-No	Partition coefficient (log Kow)
Potassium Silicate 1312-76-1	1312-76-1	-
Manganese 7439-96-5	7439-96-5	-
Lithium Silicate 12627-14-4	12627-14-4	-
Feldspar 68476-25-5	68476-25-5	-
Calcium Fluoride 7789-75-5	7789-75-5	-
Calcium Carbonate 1317-65-3	1317-65-3	-
Aluminum Lithium Silicate 12068-40-5	12068-40-5	-
Silver 7440-22-4	7440-22-4	-
Copper 7440-50-8	7440-50-8	-
Aluminum 7429-90-5	7429-90-5	-

Mobility in soil Not available.

Other adverse effects Not available

13. DISPOSAL CONSIDERATIONS

Disposal information Collect, transport, store or dispose in accordance with local, state, provincial and federal regulations. Material should be recycled if at all possible. Emptied container retains product residue.

Contaminated packaging Recycle if possible. Dispose in accordance with local, state and federal regulations.

14. TRANSPORTATION INFORMATION

Shipping Descriptions

DOT
Proper shipping name Not regulated

TDG
Proper shipping name Not regulated

IATA
Proper shipping name Not regulated

IMDG/IMO
Proper shipping name Not regulated

Marine Pollutants

Chemical name	CAS-No	USDOT Marine Pollutant	Canada TDG Marine Pollutant	IMDG Marine Pollutant
Iron	7439-89-6	-	-	-
Chromium	7440-47-3	-	-	-
Titanium dioxide	13463-67-7	-	-	-

Chemical name	CAS-No	USDOT Marine Pollutant	Canada TDG Marine Pollutant	IMDG Marine Pollutant
Nickel	7440-02-0	-	-	-
Sodium Silicate	1344-09-8	-	-	-
Potassium Silicate	1312-76-1	-	-	-
Manganese	7439-96-5	-	-	-
Lithium Silicate	12627-14-4	-	-	-
Feldspar	68476-25-5	-	-	-
Calcium Fluoride	7789-75-5	-	-	-
Calcium Carbonate	1317-65-3	-	-	-
Aluminum Lithium Silicate	12068-40-5	-	-	-
Silver	7440-22-4	-	-	-
Copper	7440-50-8	X	-	X
Aluminum	7429-90-5	-	-	-

15. REGULATORY INFORMATION

State regulations

U.S. state Right-to-Know regulations

Chemical name	CAS-No	Massachusetts - RTK	New Jersey - RTK	Pennsylvania - RTK
Iron	7439-89-6	-	-	-
Chromium	7440-47-3	X	X	X
Titanium dioxide	13463-67-7	X	X	X
Nickel	7440-02-0	X	X	X
Sodium Silicate	1344-09-8	-	-	-
Potassium Silicate	1312-76-1	-	-	-
Manganese	7439-96-5	X	X	X
Lithium Silicate	12627-14-4	-	-	-
Feldspar	68476-25-5	-	X	X
Calcium Fluoride	7789-75-5	-	X	-
Calcium Carbonate	1317-65-3	X	X	X
Aluminum Lithium Silicate	12068-40-5	-	-	-
Silver	7440-22-4	X	X	X
Copper	7440-50-8	X	X	X
Aluminum	7429-90-5	X	X	X

California Prop. 65

Chemical name	CAS-No	California Prop. 65
Iron	7439-89-6	-
Chromium	7440-47-3	-
Titanium dioxide	13463-67-7	Carcinogen
Nickel	7440-02-0	Carcinogen
Sodium Silicate	1344-09-8	-
Potassium Silicate	1312-76-1	-
Manganese	7439-96-5	-
Lithium Silicate	12627-14-4	-
Feldspar	68476-25-5	-
Calcium Fluoride	7789-75-5	-

Chemical name	CAS-No	California Prop. 65
Calcium Carbonate	1317-65-3	-
Aluminum Lithium Silicate	12068-40-5	-
Silver	7440-22-4	-
Copper	7440-50-8	-
Aluminum	7429-90-5	-

U.S. Federal Regulations

EPA pesticide registration number Not applicable

RCRA - D Series Wastes Some unused product may contain chromium which is considered hazardous waste if discarded, RCRA ID characteristic Toxic Hazardous Waste D007. Other ingredients in this product may be considered “hazardous material” in other countries and they may require special disposal methods. Contact your local municipality for the proper disposal method.Residues from welding consumables and processes could degrade and accumulate in groundwater. Welding slag from these products could typically contain the following components from the coating of the electrode: Ni, Fe, Cr, Mn, F, Na, Si, and Ca

US EPA SARA 313

Chemical name	CAS-No	CERCLA/SARA Hazardous Substances RQ	SARA 313 - Threshold Values
Iron	7439-89-6	-	-
Chromium	7440-47-3	5000 lb 2270 kg 10 lb 4.54 kg	1.0 %
Titanium dioxide	13463-67-7	-	-
Nickel	7440-02-0	100 lb 45.4 kg	0.1 %
Sodium Silicate	1344-09-8	-	-
Potassium Silicate	1312-76-1	-	-
Manganese	7439-96-5	-	1.0 %
Lithium Silicate	12627-14-4	-	-
Feldspar	68476-25-5	-	1.0 %
Calcium Fluoride	7789-75-5	-	-
Calcium Carbonate	1317-65-3	-	-
Aluminum Lithium Silicate	12068-40-5	-	-
Silver	7440-22-4	1000 lb 454 kg 1 lb 0.454 kg	1.0 %
Copper	7440-50-8	5000 lb 2270 kg	1.0 %
Aluminum	7429-90-5	-	1.0 %

US EPA SARA 311/312 hazardous categorization Not available

Chemical name	DSL/NDSL	Inventory - United States - Section 8(b) Inventory (TSCA)	U.S. - TSCA (Toxic Substances Control Act) - Section 12(b) - Export Notification
Iron	X	X	-

Chemical name	DSL/NDSL	Inventory - United States - Section 8(b) Inventory (TSCA)	U.S. - TSCA (Toxic Substances Control Act) - Section 12(b) - Export Notification
Chromium	X	X	-
Titanium dioxide	X	X	-
Nickel	X	X	-
Sodium Silicate	X	X	-
Potassium Silicate	X	X	-
Manganese	X	X	-
Lithium Silicate	X	X	-
Feldspar	X	X	-
Calcium Fluoride	X	X	-
Calcium Carbonate	X	X	-
Aluminum Lithium Silicate	X	X	-
Silver	X	X	-
Copper	X	X	-
Aluminum	X	X	-

Legend X - Listed

Intentionally Added Ingredient

Chemical name	CAS-No	Role of ingredient
Silver	7440-22-4	none

Nonfunctional Constituents

Chemical name	CAS-No	Nonfunctional Constituents
Iron	7439-89-6	Not listed
Chromium	7440-47-3	Not listed
Titanium dioxide	13463-67-7	Not listed
Nickel	7440-02-0	Not listed
Sodium Silicate	1344-09-8	Not listed
Potassium Silicate	1312-76-1	Not listed
Manganese	7439-96-5	Not listed
Lithium Silicate	12627-14-4	Not listed
Feldspar	68476-25-5	Not listed
Calcium Fluoride	7789-75-5	Not listed
Calcium Carbonate	1317-65-3	Not listed
Aluminum Lithium Silicate	12068-40-5	Not listed
Silver	7440-22-4	Not listed
Copper	7440-50-8	Not listed
Aluminum	7429-90-5	Not listed

EU Fragrance Allergens

Chemical name	CAS-No	EU - Cosmetics (1223/2009) - Annex III - Fragrance Allergens
Iron	7439-89-6	Not Listed
Chromium	7440-47-3	Not Listed
Titanium dioxide	13463-67-7	Not Listed
Nickel	7440-02-0	Not Listed
Sodium Silicate	1344-09-8	Not Listed
Potassium Silicate	1312-76-1	Not Listed

Chemical name	CAS-No	EU - Cosmetics (1223/2009) - Annex III - Fragrance Allergens
Manganese	7439-96-5	Not Listed
Lithium Silicate	12627-14-4	Not Listed
Feldspar	68476-25-5	Not Listed
Calcium Fluoride	7789-75-5	LISTED
Calcium Carbonate	1317-65-3	Not Listed
Aluminum Lithium Silicate	12068-40-5	Not Listed
Silver	7440-22-4	Not Listed
Copper	7440-50-8	Not Listed
Aluminum	7429-90-5	Not Listed

California Cleaning Products RTK - Substances on Designated Lists

Chemical name	CAS-No	Substances in Designated Lists
Iron	7439-89-6	Not listed
Chromium	7440-47-3	Present (CA Non-Cancer Hazards, [2292]); Present (US EPA PBTs, [428]); Present (total; CA MCLs, [7529]) Present (CA Non-Cancer Hazards, [2292]); Present (US EPA PBTs, [428]); Present (total; CA MCLs, [7529]) Present (CA Non-Cancer Hazards, [2292]); Present (US EPA PBTs, [428]); Present (total; CA MCLs, [7529]) Present (except hexavalent; CA Non-Cancer Hazards, [2292]); Present (including any unique chemical substance that contains Chromium as part of its infrastructure; CA TACs, [430]) Present (except hexavalent; CA Non-Cancer Hazards, [2292]); Present (including any unique chemical substance that contains Chromium as part of its infrastructure; CA TACs, [430])
Titanium dioxide	13463-67-7	Present (IARC Carcinogens, [114]); Present (airborne, unbound particles of respirable size; CA Prop 65, [409]) Present (IARC Carcinogens, [114]); Present (airborne, unbound particles of respirable size; CA Prop 65, [409])
Nickel	7440-02-0	Not listed
Sodium Silicate	1344-09-8	Not listed
Potassium Silicate	1312-76-1	Not listed
Manganese	7439-96-5	Present (CA Priority Chemicals, [4648]) Present (not otherwise specified; CA Non-Cancer Hazards, [2292]); Present (US EPA PBTs, [428]); Present (including any unique chemical substance that contains Manganese as part of its infrastructure; CA TACs, [430]); Present (CA Non-Cancer Hazards, [819]) Present (not otherwise specified; CA Non-Cancer Hazards, [2292]); Present (US EPA PBTs, [428]); Present (including any unique chemical substance that contains Manganese as part of its infrastructure; CA TACs, [430]); Present (CA Non-Cancer Hazards, [819]) Present (not otherwise specified; CA Non-Cancer Hazards, [2292]); Present (US EPA PBTs, [428]); Present (including any unique chemical substance that contains Manganese as part of its infrastructure; CA TACs, [430]); Present (CA Non-Cancer Hazards, [819]) Present (not otherwise specified; CA Non-Cancer Hazards, [2292]); Present (US EPA PBTs, [428]); Present (including any unique chemical substance that contains Manganese as part of its infrastructure; CA TACs, [430]); Present (CA Non-Cancer Hazards, [819])
Lithium Silicate	12627-14-4	Present (Canada PBTs, [4335])
Feldspar	68476-25-5	Present (does not include Barium sulfate CAS 7727-43-7; US EPA PBTs, [428]); Present (not otherwise specified; CA Non-Cancer Hazards, [2292]) Present (does not include Barium sulfate CAS 7727-43-7; US EPA PBTs, [428]); Present (not otherwise specified; CA Non-Cancer Hazards, [2292])
Calcium Fluoride	7789-75-5	Present (CA Non-Cancer Hazards, [2292]); Present (US NTP Reproductive or Developmental Toxicants, [6899]); Present (US NTP Reproductive or Developmental Toxicants, [6902]); Present (CA Non-Cancer Hazards, [819]); Present (CA Non-Cancer Hazards, [820]) Present (CA Non-Cancer Hazards, [2292]); Present (US NTP Reproductive or Developmental Toxicants, [6899]); Present (US NTP Reproductive or Developmental Toxicants, [6902]); Present (CA Non-Cancer Hazards, [819]); Present (CA Non-Cancer Hazards, [820]) Present (CA Non-Cancer Hazards, [2292]); Present (US NTP Reproductive or Developmental Toxicants, [6899]); Present (US NTP Reproductive or Developmental Toxicants, [6902]); Present (CA Non-Cancer Hazards, [819]); Present (CA Non-Cancer Hazards, [820]) Present (CA Non-Cancer Hazards, [2292]); Present (US NTP Reproductive or Developmental Toxicants, [6899]); Present (US NTP Reproductive or Developmental Toxicants, [6902]); Present (CA Non-Cancer Hazards, [819]); Present (CA Non-Cancer Hazards, [820]) Present (CA Non-Cancer Hazards, [2292]); Present (US NTP Reproductive or Developmental Toxicants, [6899]); Present (US NTP Reproductive or Developmental Toxicants, [6902]); Present (CA Non-Cancer Hazards, [819]); Present (CA Non-Cancer Hazards, [820])

Chemical name	CAS-No	Substances in Designated Lists
Calcium Carbonate	1317-65-3	Not listed
Aluminum Lithium Silicate	12068-40-5	Not listed
Silver	7440-22-4	Present (CA Non-Cancer Hazards, [2292]); Present (US EPA PBTs, [428]); Present (CA Priority Pollutants, [841]); Present (CA Priority Pollutants, [842]) Present (CA Non-Cancer Hazards, [2292]); Present (US EPA PBTs, [428]); Present (CA Priority Pollutants, [841]); Present (CA Priority Pollutants, [842]) Present (CA Non-Cancer Hazards, [2292]); Present (US EPA PBTs, [428]); Present (CA Priority Pollutants, [841]); Present (CA Priority Pollutants, [842]) Present (CA Non-Cancer Hazards, [2292]); Present (US EPA PBTs, [428]); Present (CA Priority Pollutants, [841]); Present (CA Priority Pollutants, [842]) Present (CA Non-Cancer Hazards, [2292]); Present (US EPA PBTs, [428]) Present (CA Non-Cancer Hazards, [2292]); Present (US EPA PBTs, [428])
Copper	7440-50-8	Present (CA Non-Cancer Hazards, [2292]); Present (US EPA PBTs, [428]); Present (CA MCLs, [7529]); Present (CA Non-Cancer Hazards, [820]); Present (CA Priority Pollutants, [841]); Present (CA Priority Pollutants, [842]); Present (CA Priority Pollutants, [843]) Present (CA Non-Cancer Hazards, [2292]); Present (US EPA PBTs, [428]); Present (CA MCLs, [7529]); Present (CA Non-Cancer Hazards, [820]); Present (CA Priority Pollutants, [841]); Present (CA Priority Pollutants, [842]); Present (CA Priority Pollutants, [843]) Present (CA Non-Cancer Hazards, [2292]); Present (US EPA PBTs, [428]); Present (CA MCLs, [7529]); Present (CA Non-Cancer Hazards, [820]); Present (CA Priority Pollutants, [841]); Present (CA Priority Pollutants, [842]); Present (CA Priority Pollutants, [843]) Present (CA Non-Cancer Hazards, [2292]); Present (US EPA PBTs, [428]); Present (CA MCLs, [7529]); Present (CA Non-Cancer Hazards, [820]); Present (CA Priority Pollutants, [841]); Present (CA Priority Pollutants, [842]); Present (CA Priority Pollutants, [843]) Present (CA Non-Cancer Hazards, [2292]); Present (US EPA PBTs, [428]); Present (CA MCLs, [7529]); Present (CA Non-Cancer Hazards, [820]); Present (CA Priority Pollutants, [841]); Present (CA Priority Pollutants, [842]); Present (CA Priority Pollutants, [843]) Present (CA Non-Cancer Hazards, [2292]); Present (US EPA PBTs, [428]); Present (CA MCLs, [7529]); Present (CA Non-Cancer Hazards, [820]); Present (CA Priority Pollutants, [841]); Present (CA Priority Pollutants, [842]); Present (CA Priority Pollutants, [843]) Present (CA Non-Cancer Hazards, [2292]); Present (US EPA PBTs, [428]); Present (CA MCLs, [7529]); Present (CA Non-Cancer Hazards, [820]); Present (CA Priority Pollutants, [841]); Present (CA Priority Pollutants, [842]); Present (CA Priority Pollutants, [843]) Present (not otherwise specified; CA Non-Cancer Hazards, [2292]); Present (This category does not include CAS numbers 147-14-8, 1328-53-6, or 14302-13-7, or copper phthalocyanine compounds that are substituted with only hydrogen and/or chlorine and/or bromine; US EPA PBTs, [428]); Present (CA Non-Cancer Hazards, [820]) Present (not otherwise specified; CA Non-Cancer Hazards, [2292]); Present (This category does not include CAS numbers 147-14-8, 1328-53-6, or 14302-13-7, or copper phthalocyanine compounds that are substituted with only hydrogen and/or chlorine and/or bromine; US EPA PBTs, [428]); Present (CA Non-Cancer Hazards, [820]) Present (not otherwise specified; CA Non-Cancer Hazards, [2292]); Present (This category does not include CAS numbers 147-14-8, 1328-53-6, or 14302-13-7, or copper phthalocyanine compounds that are substituted with only hydrogen and/or chlorine and/or bromine; US EPA PBTs, [428]); Present (CA Non-Cancer Hazards, [820])
Aluminum	7429-90-5	Present (ATSDR Neurotoxicants, [7404]); Present (CA MCLs, [7529]); Present (CA Non-Cancer Hazards, [2292]); Present (dust or fume; US EPA PBTs, [428]) Present (ATSDR Neurotoxicants, [7404]); Present (CA MCLs, [7529]); Present (CA Non-Cancer Hazards, [2292]); Present (dust or fume; US EPA PBTs, [428]) Present (ATSDR Neurotoxicants, [7404]); Present (CA MCLs, [7529]); Present (CA Non-Cancer Hazards, [2292]); Present (dust or fume; US EPA PBTs, [428]) Present (ATSDR Neurotoxicants, [7404]); Present (CA MCLs, [7529]); Present (CA Non-Cancer Hazards, [2292]); Present (dust or fume; US EPA PBTs, [428])

16. OTHER INFORMATION

NFPA

Health	2
Flammability	0
Instability	0

HMIS

Health	2
Flammability	0
Physical hazards	0

Notice: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA).

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Revision note	

Key to abbreviations

ACGIH (American Conference of Governmental Industrial Hygienists)
ATE (Average Toxicity Estimate)
DSL/NDSL (Domestic Substance List/Non-Domestic Substance List)
HMIS (Hazardous Materials Identification System)
IARC (International Agency for Research on Cancer)
IATA (International Air Transport Association)
IMDG/IMO (International Maritime Dangerous Goods/International Maritime Orgnaization)
NFPA (National Fire Protection Association)
NTP (National Toxicology Program)
OEL (Occupational Exposure Level)
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
PEL (Permissible Exposure Limit)
TSCA (Toxic Substance Control Act)
USEPA (United States Environmental Protection Agency)

Disclaimer

The information accumulated herein is believed to be accurate, but is not warranted to be, whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

End of Safety Data Sheet