SECTION 1 – IDENTIFICATION

Product Name: 200 Ultralloy **Product No.:** A200
Product Classification: Covered electrode for shielded Metal arc welding (SMAW)
Supplier's Name: Lonestar Maintenance Chemicals **Emergency Phone:** 1-800-721-2448
Address: P.O. Box 209, Buna, TX 77612

SECTION 2 – COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENTS	CAS NUMBER	Exposure Limit (mg/m^3)		% Ingredients (by weight)
		OSHA PEL	ACGIH-TLV	
Iron	7439-89-6	10 (as FE)	5 (as Fe)	30 – 60
Chromium #	7440-47-3	1	0.5	15 - 40
Titanium Dioxide	13463-67-7	15	10	10 – 30
Nickel #	7440-02-0	1	0.2	7 – 13
Feldspar	68476-25-5	10	2	1 - 5
Calcium Barbonate	1317-65-3	5	10	1 - 5
Calcium Fluoride	7789-75-5	2.5 (as F)	2.5 (as F)	1 - 5
Sodium Silicate	1344-09-8	Not listed	Not listed	1 - 5
Potassium Silicate	1312-76-1	Not listed	Not listed	1 - 5
Lithium Aluminum Silicate (# Aluminum)	12068-40-5	Not listed	5 (as Al fume)	1 - 5
Cobalt Aluminate Blue Spinel #	1345-16-0	0.1 (as Co)	0.02 (as Co)	0.1 – 1
Manganese #	7439-96-5	5 (ceiling)	0.2	0.1 – 1
Potassium Oxalate	6487-48-5	Not listed	5	0.5 – 1.5

SECTION 3 – HAZARD IDENTIFICATION

This section covers the materials from which these products are manufactured. The fumes and gases produced during normal use of these products are covered in Section 2. The term "hazardous" in "Hazard Identification" should not only be interpreted as a term required and defined in OSHA Hazard Communication Standard (29 CFR Part 1910.1200), but also as defined by other regulatory agencies. The chemicals or compounds subject to reporting under Title III, in Section 313, of the Superfund Amendments and Reauthorization Act (SARA) are marked by the symbol #.

Warning: This product contains or produces a chemical known to the State of California to cause birth defects (or other reproductive harm) and cancer. (California Health & Safety Code 25249.65 et seq.)

SECTION 4 – FIRST AID MEASURES

Inhalation: Remove to fresh air. If breathing is difficult, administer oxygen. If not breathing, begin artificial respiration. If no detectable pulse, begin Cardiopulmonary Resuscitation. (CPR). Call for medical aid.
Skin: Wash affected area with soap and water. If rash develops, see a physician.
Eyes: Flush with a large amount of fresh water for at least 15 minutes. Get medical attention.
Ingestion: See medical attention.

SECTION 5 – FIRE FIGHTING MEASURES

Non-Flammable: Welding arc and sparks can ignite combustibles. Refer to American National Standard Z49.1 for fire prevention during welding. These products as shipped are non-hazardous, non-flammable, non-explosive and non-reactive.

Rating under National Fire Production 704: Health – 2 Flammability – 0 Reactivity - 0

SECTION 6 – HANDLING AND STORAGE

Read and under the instructions and precautionary label on this product. See American National Standard Z49.1, Safety in Welding and Cutting, published by the "American Welding Society," 550 N.W. Lejeune Road, Miami, Florida 33126 and OSHA Publication 2206 (29 CFR 1910), U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954 for more detail on the following:

Ventilation: Use enough ventilation, local exhaust at the arc, or both, to keep the fumes and gases below the TLV's n the workers breathing zone and the general area. Train the welder to keep his 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 himself (or herself) from work and ground, especially if clothing and gloves are wet.

Storage: Keep material sealed and dry before use. Keep remaining product sealed and dry.

SECTION 7 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Threshold Limit Value: The ACGIH recommended general limit for welding fume NOS (not otherwise specified) is 5 mg/m^3. The ACGIH 1999 preface states: "The TLV-TWA should be used as guides in the control of heal hazards and should not be used as firm lines between safe and dangerous concentrations."

Effects of Overexposure: Electric arc welding may create one or more of the following health hazards:

Fumes and gases can be dangerous to your health.

Primary routes of entry are the respiratory system. Other possible routes are eyes, ingestion, and/or skin contact.

Pre-existing respiratory or allergic conditions may be aggravated in some individuals (i.e. asthma, emphysema).

Short Term (Acute) Overexposure to welding fumes may result in 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 and Nickel Oxide:** May cause metallic taste, nausea, tightness in chest, fever and allergic reactions.

Long term (Chronic) Overexposure 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 and 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 and 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.

Arc Rays can injure eyes and burn skin. Skin cancer has been reported.

Electric shock can kill! **In case of electrical shock:** turn off power and follow recommended treatment. Call a physician.

SECTION 8 – STABILITY AND REACTIVITY

Welding fumes cannot be classified simply. The composition and quantity of both are dependent upon the metal being welded, the process, procedure and the electrodes used. Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coatings on the metal being welded (such as paint, plating or galvanizing), the number of welders and the volume of the work area, the quality and the amount of ventilation, position of the welder's head with respect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from cleaning and degreasing activities).

When the electrode is consumed, fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section 3. 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 and coating, 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, and potassium. Chromium and nickel oxides may also be present. The table below lists reasonably expected fumes that may be generated.

SUBSTANCE	CAS NUMBER	Exposure Limit (mg/m$^{3)}$	
		OSHA PEL	ACGIH-TLV
Iron Oxide	1309-37-1	10 (as Fe)	5 (as Fe)
Nitric Oxide	10102-43-9	30	31
Chromium (VI)	Not listed	0.005	0.05 (as Cr VI)
Nickel Oxide #	1313-99-1	1 (as Ni)	0.2 (as Ni)
Manganese Fume #	7439-96-5	5	0.2 (NIC 0.03)

NIC = notice of intended change

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 CrVI (5 micrograms/m^3) may be reached before the ACGIH recommended general welding fume limit of 5 mg/m^3 is reached. Monitor fume levels and Cr VI Level. Train workers about the hazards of Cr(VI). **Read and comply with OSHA's permissible exposure limits for hexavalent chromium (CrVI), Fed. Reg. 71-10099 (specifically 29 CFR 1910.1026, 29 CFR 1915.1025, 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.

SECTION 9 – DISPOSAL CONSIDERATIONS

Dispose of any grinding dust and waste residues in accordance with EPA or local regulations. Plastic containers and cardboard packaging can be recycled.

SECTION 10 – OTHER INFORMATION

IARD: International Agency for the Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
NIOSH: National Institute for Occupational Safety and Health
NTP: National Toxicology Program
PEL: Permissible Exposure Limit
OSHA: U.S. Occupational Safety and Health Administration
TLV: Threshold Limit Value
CAS: Chemical Abstracts Service Registry Number

Exposure limits are subject to change. Contact ACGIH, OSHA, NIOSH and IARC for current values.

The information presented herein, while not guaranteed, was prepared by competent technical personnel and is true and accurate to the best of our knowledge. While our technical personnel will be happy to respond to questions regarding safe handling and use procedures, safe handling and use remains the responsibility of the user. No suggestions for use are intended as, and nothing herein shall be construed as a recommendation to infringe any existing patents or violate any federal, state or local laws, rules, regulations or ordinances.