

1. Identification

Product identifier: Aluminum (Ingots, Sows, Cones, Rod)

Other means of identification

SDS number	20130715-01
Recommended use	Not available.
Recommended restrictions	None known.
Manufacturer / Importer / Supplier / Distributor information	
Company name	Superior Aluminum Alloys
Address	14214 Edgerton Rd. New Haven, IN 46774
Telephone	1-260-749-7599
E-mail	sds-help@omnisource.com
Contact person	Safety Department
Emergency phone number	CHEMTREC 1-800-424-9300



Ingots



Sows



Cones



Rod

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Sensitization, respiratory Sensitization, skin Carcinogenicity Reproductive toxicity Specific target organ toxicity, repeated exposure (inhalation)
OSHA defined hazards	Combustible dusts

Label elements



Signal word Danger

Hazard statement May cause an allergic skin reaction. Suspected of causing cancer. May damage fertility or the unborn child. May form combustible dust concentrations in air.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe dust/fume. In case of inadequate ventilation wear respiratory protection. Contaminated work clothing must not be allowed out of the workplace. Prevent dust accumulation to minimize explosion hazard.

Response If exposed or concerned: Get medical advice/attention. If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a poison center/doctor. If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. In case of fire: Use special powder against metal fires, dry sand or graphite powder for extinction.

Storage Store locked up.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) Not classified.

Supplemental information

In its manufactured and shipped state, this product is considered to present a low hazard. Processing may generate hazardous fumes and dusts. Above classifications are for processing which may generate dust.

3. Composition/information on ingredients

Chemical name	CAS number	%
Aluminum	7429-90-5	76-99
Silicon	7440-21-3	0.01-24
Magnesium as magnesium oxides	7439-95-4	0.01-8
Zinc	7440-66-6	0.01-7
Copper	7440-50-8	0.01-6
Iron	7439-89-6	0.01-3.5
Manganese	7439-96-5	0.01-3
Nickel	7440-02-0	0.01-3
Chromium	7440-47-3	0.01-0.5
Lead	7439-92-1	0.01-0.5

4. First-aid measures

Inhalation	Move to fresh air. If breathing is difficult, give oxygen. If breathing stops, provide artificial respiration. Call a physician if symptoms develop or persist.
Skin contact	Wash off with soap and water. If skin irritation or an allergic skin reaction develops, get medical attention. Take off contaminated clothing and wash before reuse. In case of contact with hot or molten product, cool rapidly with water and seek immediate medical attention. Do not attempt to remove molten product from skin because skin will tear easily. Removal of solidified molten material from skin requires medical assistance.
Eye contact	Do not rub eye. Rinse with plenty of water. Get medical attention if irritation develops and persists. If molten material contacts the eye, immediately flush with plenty of water for at least 15 minutes. Get medical attention immediately.
Ingestion	Rinse mouth thoroughly if dust is ingested. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Irritant effects. Rash. Discomfort in the chest. Shortness of breath. Coughing.
Indication of immediate medical attention and special treatment needed	Treat symptomatically. Symptoms may be delayed.
General information	If exposed or concerned, get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media	Special powder against metal fires. Carbon dioxide (CO ₂). Foam.
Unsuitable extinguishing media	Do not use water as an extinguisher. Hot molten material will react violently with water resulting in spattering and fuming. Dousing metallic fires with water may generate hydrogen gas, an extremely dangerous explosion hazard, particularly if fire is in a confined environment.
Specific hazards arising from the chemical	Dust accumulation from this product may present an explosion hazard in the presence of an ignition source. May generate hydrogen gas if exposed to water, acids, bases or oxidizers.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire-fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Eliminate all sources of ignition. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Use only non-sparking tools. Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation.
Methods and materials for containment and cleaning up	Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Collect dust using a vacuum cleaner equipped with HEPA filter. If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. Collect in approved containers and seal securely. For waste disposal, see section 13 of the MSDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Combustible dust clouds may be created where operations produce fine material (dust). Eliminate all sources of ignition. Minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Provide explosion-proof ventilation for high dust concentrations. Avoid inhalation of dust and fumes. Avoid contact with eyes, skin, and clothing. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well-ventilated place. Keep away from heat, spark, open flames and other sources of ignition. Store away from incompatible materials.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Components	Type	Value
Lead (CAS 7439-92-1)	TWA	0.05 mg/m ³

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	PEL	5 mg/m ³ 15 mg/m ³	Respirable dust. Total dust.
Chromium (CAS 7440-47-3)	PEL	1 mg/m ³	
Copper (CAS 7440-50-8)	PEL	1 mg/m ³ 0.1 mg/m ³	Dust and mist. Fume.
Manganese (CAS 7439-96-5)	Ceiling	5 mg/m ³	Fume.
Nickel (CAS 7440-02-0)	PEL	1 mg/m ³	
Silicon (CAS 7440-21-3)	PEL	5 mg/m ³ 15 mg/m ³	Respirable fraction. Total dust.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	TWA	1 mg/m ³	Respirable fraction.
Chromium (CAS 7440-47-3)	TWA	0.5 mg/m ³	
Copper (CAS 7440-50-8)	TWA	1 mg/m ³ 0.2 mg/m ³	Dust and mist. Fume.
Lead (CAS 7439-92-1)	TWA	0.05 mg/m ³	
Manganese (CAS 7439-96-5)	TWA	0.1 mg/m ³ 0.02 mg/m ³	Inhalable fraction. Respirable fraction.
Nickel (CAS 7440-02-0)	TWA	1.5 mg/m ³	Inhalable fraction.

US NIOSH Pocket Guide to Chemical Hazards: Recommended exposure limit (REL)

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	TWA	5 mg/m ³ 5 mg/m ³ 10 mg/m ³	Respirable. Welding fume or pyrophoric powder. Total
Chromium (CAS 7440-47-3)	TWA	0.5 mg/m ³	
Copper (CAS 7440-50-8)	TWA	1 mg/m ³	Dust and mist.
Lead (CAS 7439-92-1)	TWA	0.05 mg/m ³	
Manganese (CAS 7439-96-5)	TWA	1 mg/m ³	Fume.
Nickel (CAS 7440-02-0)	TWA	0.015 mg/m ³	
Silicon (CAS 7440-21-3)	TWA	5 mg/m ³ 10 mg/m ³	Respirable. Total

US NIOSH Pocket Guide to Chemical Hazards: Short Term Exposure Limit (STEL)

Components	Type	Value	Form
Manganese (CAS 7439-96-5)	STEL	3 mg/m ³	Fume.

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Lead (CAS 7439-92-1)	300 µg/l	Lead	Blood	*

* - For sampling details, please see the source document.

Appropriate engineering controls Observe occupational exposure limits and minimize the risk of exposure. Use process enclosures, local exhaust ventilation, or other engineering controls to control sources of dust and fumes. Provide explosion-proof ventilation for high dust concentrations. Eye wash fountain and emergency showers are recommended.

Individual protection measures, such as personal protective equipment

Eye/face protection Use tight fitting goggles if dust is generated. Wear a full-face respirator, if needed.

Skin protection

Hand protection

Wear protective gloves. Suitable gloves can be recommended by the glove supplier.

Other

Wear suitable protective clothing.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Respirator type: Wear a NIOSH approved respirator, with appropriate cartridge or canister, suitable for airborne concentration levels present. Seek advice from supervisor on the company's respiratory protection standards.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance	Solid metal.
Physical state	Solid.
Form	Ingots, Sows, Cones, Rod
Color	Silver-white.
Odor	Odorless
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	1200 °F (648.89 °C)
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	Negligible.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and reactivity

Reactivity	The product is stable and non reactive under normal conditions of storage and transport. May generate hydrogen gas if exposed to water, acids, bases or oxidizers.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Will not occur.
Conditions to avoid	Minimize dust generation and accumulation. Heat, sparks, flames. Avoid molten metal contact with water.
Incompatible materials	Strong oxidizing agents. Acids. Bases. Halogenated compounds. Water.
Hazardous decomposition products	Metal oxides.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Ingestion of dusts generated during working operations may cause nausea and vomiting.
Inhalation	Dust may irritate respiratory system. May cause inhalation hypersensitivity (occupational asthma) in sensitive individuals. Prolonged exposure may cause chronic effects.
Skin contact	Dust may irritate skin. May cause sensitization by skin contact.
Eye contact	Dust may irritate the eyes.

Symptoms related to the physical, chemical and toxicological characteristics Irritant effects. Rash. Discomfort in the chest. Shortness of breath. Coughing.

Information on toxicological effects

Acute toxicity High concentrations of freshly formed fumes/dusts of metal oxides can produce symptoms of metal fume fever.

Components	Species	Test Results
Iron (CAS 7439-89-6)		
Acute		
<i>Oral</i>		
LD50	Rat	30 g/kg
Manganese (CAS 7439-96-5)		
Acute		
<i>Oral</i>		
LD50	Rat	9000 mg/kg
Silicon (CAS 7440-21-3)		
Acute		
<i>Oral</i>		
LD50	Rat	3160 mg/kg
Aluminum (CAS 7429-90-5)		
Acute		
<i>Oral</i>		
LD50	Rat	> 10000 mg/kg
Skin corrosion/irritation	Dust may irritate skin.	
Serious eye damage/eye irritation	Dust may irritate the eyes.	
Respiratory sensitization	May cause allergy or asthma symptoms or breathing difficulties if inhaled.	
Skin sensitization	May cause an allergic skin reaction.	
Germ cell mutagenicity	No data available.	
Carcinogenicity	Dust: Suspected of causing cancer.	
IARC Monographs. Overall Evaluation of Carcinogenicity		
Chromium (CAS 7440-47-3)		3 Not classifiable as to carcinogenicity to humans.
Lead (CAS 7439-92-1)		2B Possibly carcinogenic to humans.
Nickel (CAS 7440-02-0)		2B Possibly carcinogenic to humans.
NTP Report on Carcinogens		
Nickel (CAS 7440-02-0)		Known To Be Human Carcinogen. Reasonably Anticipated to be a Human Carcinogen.

Reproductive toxicity	Dust: May damage fertility or the unborn child.
Specific target organ toxicity - single exposure	No data available.
Specific target organ toxicity - repeated exposure	May cause damage to organs (respiratory tract) through prolonged or repeated exposure by inhalation.
Aspiration hazard	Not applicable.
Chronic effects	Frequent inhalation of fume/dust over a long period of time increases the risk of developing lung diseases. Prolonged and repeated overexposure to dust can lead to benign pneumoconiosis. Chronic inhalation of metallic oxide dust/fume may cause metal fume fever.
Further information	Symptoms may be delayed.

12. Ecological information

Ecotoxicity

Components		Species	Test Results
Aluminum (CAS 7429-90-5)			
Aquatic			
Fish	LC50	Rainbow trout, Donaldson trout (Oncorhynchus mykiss)	0.16 mg/l, 96 hours
Copper (CAS 7440-50-8)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	0.0318 mg/l, 48 hours
	LC50	Water flea (Daphnia magna)	0.04 - 0.05 mg/l, 48 hours
Fish	LC50	Chinook salmon (Oncorhynchus tshawytscha)	0.02 mg/l, 96 hours
		Oncorhynchus mykiss	200 µg/l, 96 hours
Iron (CAS 7439-89-6)			
Aquatic			
Fish	LC50	Channel catfish (Ictalurus punctatus)	> 500 mg/l, 96 hours
Lead (CAS 7439-92-1)			
	LC50	Rainbow trout, Donaldson trout (Oncorhynchus mykiss)	1.17 mg/l, 96 Hours
Nickel (CAS 7440-02-0)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	2.916 mg/l, 96 hours
Zinc (CAS 7440-66-6)			
Aquatic			
Crustacea	LC50	Daphnia magna	0.068 mg/l, 48 hours
Fish	LC50	Bony fish superclass (Osteichthyes)	0.52 - 3.59 mg/l, 96 hours

Persistence and degradability	The product is not readily biodegradable.
Bioaccumulative potential	No data available on bioaccumulation.
Mobility in soil	No data available.
Mobility in general	The product is immiscible with water and will sediment in water systems.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal. Waste must be kept in sealed and labeled containers. Dispose of waste and residues in accordance with local authority requirements. Recover and reclaim or recycle, if practical.
Local disposal regulations	Dispose of in accordance with local regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	

Byproducts and residues from this product may be reprocessed or recycled.
Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

U.S. Department of Transportation (DOT)

Not regulated as a hazardous material by DOT.

IATA

Not regulated as a dangerous good.

IMDG

Not regulated as a dangerous good.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Lead (CAS 7439-92-1)	Reproductive toxicity Central nervous system Kidney Blood Acute toxicity
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CERCLA Hazardous Substance List (40 CFR 302.4)

Chromium (CAS 7440-47-3)	LISTED
Copper (CAS 7440-50-8)	LISTED
Lead (CAS 7439-92-1)	LISTED
Manganese (CAS 7439-96-5)	LISTED
Nickel (CAS 7440-02-0)	LISTED
Zinc (CAS 7440-66-6)	LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - Yes Delayed Hazard - Yes Fire Hazard - Yes Pressure Hazard - No Reactivity Hazard - No
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SARA 302 Extremely hazardous substance	No
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SARA 311/312 Hazardous chemical	Yes
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Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Chromium (CAS 7440-47-3)
Lead (CAS 7439-92-1)
Manganese (CAS 7439-96-5)
Nickel (CAS 7440-02-0)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)	Not regulated.
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Food and Drug Administration (FDA)	Not regulated.
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US state regulations

US. Massachusetts RTK - Substance List

Aluminum (CAS 7429-90-5)
Chromium (CAS 7440-47-3)
Copper (CAS 7440-50-8)

Lead (CAS 7439-92-1)
 Magnesium as magnesium oxides (CAS 7439-95-4)
 Manganese (CAS 7439-96-5)
 Nickel (CAS 7440-02-0)
 Silicon (CAS 7440-21-3)
 Zinc (CAS 7440-66-6)

US. New Jersey Worker and Community Right-to-Know Act

Aluminum (CAS 7429-90-5) 500 lbs
 Chromium (CAS 7440-47-3) 500 lbs
 Copper (CAS 7440-50-8) 500 lbs
 Lead (CAS 7439-92-1) 500 lbs
 Manganese (CAS 7439-96-5) 500 lbs
 Nickel (CAS 7440-02-0) 500 lbs
 Zinc (CAS 7440-66-6) 500 lbs

US. Pennsylvania RTK - Hazardous Substances

Aluminum (CAS 7429-90-5)
 Chromium (CAS 7440-47-3)
 Copper (CAS 7440-50-8)
 Lead (CAS 7439-92-1)
 Magnesium as magnesium oxides (CAS 7439-95-4)
 Manganese (CAS 7439-96-5)
 Nickel (CAS 7440-02-0)
 Silicon (CAS 7440-21-3)
 Zinc (CAS 7440-66-6)

US. Rhode Island RTK

Aluminum (CAS 7429-90-5)
 Chromium (CAS 7440-47-3)
 Copper (CAS 7440-50-8)
 Lead (CAS 7439-92-1)
 Manganese (CAS 7439-96-5)
 Nickel (CAS 7440-02-0)
 Zinc (CAS 7440-66-6)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Lead (CAS 7439-92-1)
 Nickel (CAS 7440-02-0)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

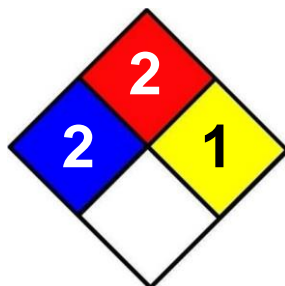
*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 15 July 2013
Revision date 1 April 2015
Version # 02
Further information Refer to NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids, for safe handling.

NFPA Rating



List of abbreviations

LD50: Lethal Dose, 50%.
LC50: Lethal Concentration, 50%.
EC50: Effective concentration, 50%.
TWA: Time weighted average.
STEL: Short term exposure limit.

References

EPA: AQUIRE database
HSDB® - Hazardous Substances Data Bank
US. IARC Monographs on Occupational Exposures to Chemical Agents
IARC Monographs. Overall Evaluation of Carcinogenicity
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices

Disclaimer

This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.

SDS Status / Rev. Info

1 April 2015: Changes to sections 1,3,9,16 (clarification, added photographs)

Other information

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