



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

1.1 Product designation

Wrought aluminum products, 7xxx Series alloys.

1.2 Identified uses of the substance/mixture

Various fabricated aluminium parts and products.

1.3 Further information on the company/undertaking

Manufacturer: Uddeholms AB

Address: Uvedsvägen 15
S-683 85 Hagfors
SWEDEN

Contact: Hse@uddeholm.com

1.4 Emergency telephone number

Emergency phone number: 911

SECTION 2: Hazards Identification

2.1 Classification of the substance/mixture

Complete composition is provided in Section 3 and may include some components classified as nonhazardous.

2.1.1 Health hazards

The health effects listed below are not likely to occur unless processing of this product generates dusts or fumes. The following statements summarize the health effects generally expected in cases of overexposures. User specific situations should be assessed by qualified individual.

Eyes	Dust and fumes from processing: Can cause irritation.
Skin	Contact with residual oil/oil coating: Can cause irritation. Prolonged or repeated skin contact may cause irritation. Dust and fumes from processing: Can cause irritation. Prolonged or repeated skin contact may cause sensitization and allergic contact dermatitis.
Inhalation	Health effects from mechanical processing (e.g., cutting, grinding): Can cause Dust: Can cause irritation of the upper respiratory tract. Chronic overexposures: Can cause scarring of the lungs (pulmonary fibrosis), damage to the heart muscle (cardiomyopathy), reduction in the number of red blood cells (anemia), skin abnormalities (pigmentation changes), central nervous system damage, secondary Parkinson's disease and reproductive harm. Additional health effects from elevated temperature processing (e.g., welding, melting): Dust and fumes: Can cause irritation of the respiratory tract. Acute overexposures: Can cause metal fume fever (nausea, chills, fever, shortness of breath and malaise), reduced ability of the blood to carry oxygen (methemoglobin) and the

accumulation of fluid in the lungs (pulmonary edema). Chronic overexposures: Can cause asthma, benign lung disease (siderosis) and lung cancer.

Carcinogenicity Dust from mechanical processing: Can present a cancer hazard. Dust and fumes from welding or elevated temperature processing: Can present a cancer hazard.

Reproduction Dust from mechanical processing: Can present a reproductive hazard. Dust and fumes from welding or elevated temperature processing: Can present a cancer hazard.

2.1.2 Physical hazards

Not classified for physical hazards.

2.1.3 Environmental hazards

Not classified for environmental hazards.

2.2 Labeling

The product is not classified as hazardous and does not therefore require any labeling.

2.3 Other hazards

Not available.

SECTION 3: Composition/information on ingredients

3.2 Contents/mixtures

Substance	Identification	Concentration (%)
Aluminum	CAS 7429-90-5	> 84
Zinc	CAS 7440-66-6	< 12
Magnesium	CAS 7439-95-42	< 3,7
Copper	CAS 7440-50-8	< 3,3
Cobalt *	CAS 7440-48-4	< 2
Manganese	CAS 7439-96-5	< 1,5
Iron	CAS 7439-89-6	< 1,4
Silicon	CAS 7440-21-3	< 1,2
Chromium	CAS 7440-47-3	< 0,4
Nickel **	CAS 7440-02-0	0 – 0,2
Lead (*)	CAS 7439-92-1	< 0,05

Additional information:

* - Alloys 7064 and 7090.

** - Alloys 7093 and C7093

(*) – Present as impurity. While lead is not intentionally added to this mixture, it could potentially enter through the recycle stream.

SECTION 4: First aid measures

4.1 Description of first aid measures

First aid procedures:

Eye contact	Dust and fumes from processing: Rinse eyes with plenty of water or saline for at least 15 minutes. Consult a physician.
Skin contact	Dust and fume from processing or contact with lubricant/residual oil: wash with soap and water for at least 15 minutes. Get medical attention if irritation develops or persists.
Inhalation	Dust and fumes from processing: Remove to fresh air. Check for clear airway, breathing and presence of pulse. Provide cardiopulmonary resuscitation for persons without pulse or respirations. Consult with a physician.

4.2 Most important symptoms and effects, both acute and delayed

Dust and fumes from processing this material can aggravate conditions such as asthma, chronic lung disease, secondary Parkinson's disease and skin rashes.

4.3 Any immediate medical attention and special treatment needed

Not available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

USE class D extinguishing agents on fines, dust or molten metal of this substance. Use coarse water spray on chips and turnings.

DO NOT USE halogenate extinguishing agents on small chips/fines.

DO NOT USE water in fighting fires around molten metal.

These fire extinguishing agents will react with the burning metal!

5.2 Special hazards arising from the substance or mixture

May be a potential hazard under the following conditions:

- Dust clouds may be explosive. Even a minor dust cloud can explode violently. Dust accumulation on the floor, ledges and beams can present a risk of ignition, flame propagation and secondary explosions.
- Chips, fines and dust in contact with water can generate flammable/explosive hydrogen gas. These gases could present an explosion hazard in confined or poorly ventilated spaces.
- Dust and fines in contact with certain metal oxides (e.g., rust, copper oxide). A thermite reaction, with considerable heat generations, can be initiated by a weak ignition source.
- Molten metal in contact with water/moisture or certain metal oxides (e.g., rust, copper oxide). Moisture entrapped by molten metal can be explosive. Contact of molten aluminum with certain metal oxides can initiate a thermite reaction. Finely divided metals

(e.g., powders or wire) may have enough surface oxide to produce thermite reactions/explosions.

5.3 Advice for firefighters

Firefighters should wear NIOSH approved, positive pressure, self-contained breathing apparatus and full protective clothing when appropriate.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

In solid form this material causes no special clean-up problems. Wear appropriate protective equipment and clothing during cleaning of debris or dust of the product.

6.2 Environmental precautions

Avoid release to the environment. In the event of a spill or accidental release, the competent authorities need to be notified in accordance with all applicable regulations. Prevent further leakage or spillage if it can be done safely. Keep out of sewers, watercourses or on the ground and in the aquatic environment.

6.3 Methods and materials for containment and cleaning

Collect scrap for recycling.

If molten: Contain the flow using sand or salt flux as a dam. All tooling (e.g., shovels or hand tools) and containers which come in contact with molten metal must be preheated or specially coated, rust free and approved for such use. Allow the spill to cool before remelting as scrap.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

If processing of this product generates dust or if extremely fine particulate is generated, obtain and follow the safety procedures and equipment guides contained in Aluminum Association Bulletin F-1 and National Fire Protection Association (NFPA) brochures listed in section 16.

7.2 Conditions for safe storage, including any pollution

Keep material dry. Avoid generating dust. Avoid contact with sharp edges or heated metal. Hot and cold aluminum are not visually different. Hot aluminum does not necessarily glow red.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

8.1.1 Occupational exposure limit values (Sweden)

Compounds	Type of limit	Value (mg/m ³)	Form
Aluminum (CAS 7429-90-5)	NGV	2	Respirable dust
		5	Total dust
Zinc (CAS 7440-66-6)	-	-	Not applicable

Magnesium (CAS 7439-95-4)	-	-	Not applicable
Copper (CAS- 7440-50-8)	NGV	0.2	Respirable dust
		1	Total dust
Cobalt (CAS- 7440-48-4)	NGV	0.02	Total dust
Manganese (7439-96-5)	NGV	0.1	Respirable dust
		0.2	Total dust
Iron (CAS 7439-89-6)	-	-	Not applicable
Silicon (CAS 7440-21-3)	-	-	Not applicable
Chromium (CAS 7440-47-3)	NGV	0.5	Total dust
Nickel (CAS- 7440-02-0)	NGV	0.5	Total dust
Lead (CAS 7439-92-1)	NGV	0.05	Respirable dust
		0.1	Total dust

Note:

In accordance with the CLP Regulation, steels containing more than 10% nickel should be classified as Specific Target Organ Toxicity Repeated Exposure 1 (STOT RE1) and steels containing 1 to 10% nickel should be classified as Specific Target Organ Toxicity Repeated Exposure 2 (STOT RE 2). Steels containing more than 1% nickel should be classified as Carcinogen Category 2.

8.1.2 Biological limits values

No biological exposure limits has been detected for the constituents.

8.1.3 Recommended monitoring procedures

Wet methods:

Machine Use is normally carried out with a flow of lubricating liquid/coolant, which helps to reduce airborne particles. However, by driving the machine with coolant containing small divided particles in suspension, may cause the concentration increases to such a point where the particles can become airborne during use. Some processes such as sanding and grinding may require a complete covered containment and local exhaust ventilation. Prevent coolant spill on floor areas, external structures or operators' clothing. Use a coolant filtering system to remove particles from the cooling liquid.

Work practies:

Develop working process and procedures to prevent particles that come in contact with workers' skin, hair or personal clothing. If the working practices and / or procedures are not effective enough to control exposure and prevent airborne or visual particles from being stored on skin, hair or clothing, provide appropriate when washing / cleaning facilities. Written procedures should describe the plant's requirements for protective clothing and personal hygiene. These requirements for clothing and personal hygiene helps prevent the spread of the particles to areas that are not used for production or that they comply with the staff home. Never use compressed air to clean work clothes or other surfaces.

Housekeeping:

Use vacuum or wet cleaning methods for removing particles from surfaces. Be certain to de-energize the electrical system before beginning wet cleaning. Use a vacuum cleaner with a HEPA filter. Do not use compressed air, brushes, or regular vacuum cleaner to remove particles from the surfaces, as this may lead to increased exposure to airborne particles. Follow the manufacturer's instructions when performing maintenance on the vacuum cleaner with a HEPA filter used for cleaning hazardous materials.

8.1.4 Exposure guidelines

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

8.2 Exposure Controls

General

Personnel who handle and work with molten should utilize primary protective clothing like polycarbonate face shields, fire resistant tapper's jackets, neck shades (snoods), leggings, spats and similar equipment to prevent burn injuries. In addition to primary protection, secondary, secondary or day-to-day work clothing that is fire resistant and sheds metal splash is recommended for use with molten metal. Synthetic materials should never be worn even as secondary clothing (undergarments).

Minimize breathing oil vapors and mist. Remove oil contaminated clothes; launder or dry-clean before reuse. Remove oil contaminated shoes and thoroughly clean and dry before reuse. Cleanse skin thoroughly after contact, before breaks and meals, and at the end of the work period. Oil coating is readily removed from skin with waterless hand cleaners followed by a thorough washing with soap and water.

Eye/face protection

Wear safety glasses with side shields.

Skin protection

Wear impervious gloves to avoid repeated or prolonged skin contact with residual oils and to avoid any skin injury.

Respiratory protection

Dust and fumes from processing: Use NIOSH-approved respiratory protection as specified by an Industrial Hygienist or other qualified professional if considerations exceed the limits listed in Section 8. Suggested respiratory protection: P95, P100 for lead.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Colour	Silver
Odour	Odorless
pH-value	Not applicable
Flammability	Not applicable
Solubility in water	Insoluble
Density	2,7 – 2,9 g/cm ³ (0,098 – 0,105 lb/in ³)
Melting point	476,7 – 657,2 °C (890 – 1215 °F)

9.2 Other information

No further information applicable.

SECTION 10: Stability and reactivity

10.1 Reactivity

There is no risk for reactivity.

10.2 Chemical stability

Stable under normal conditions of use, storage and transportation as shipped.

10.3 Possibility for hazardous reactions

Hazardous polymerization of this product will not occur.

10.4 Conditions to avoid

Avoid dust formation. Contact with water. Contact with acids. Contact with alkalis.

10.5 Incompatible materials

Water, strong acids, alkalies and oxidizing agents.

10.6 Hazardous decomposition products

Not available.

SECTION 11: Toxicological information

11.1 Information on toxicological effects associated with the ingredients

Aluminum	Dust and fumes has low health risk by inhalation. Generally considered to be biologically inert (milling, cutting, grinding).
Copper	Dust and mists can cause irritation of the eyes, mucous membranes, skin and respiratory tract. Chronic overexposures can cause reduction in the number of red blood cells (anaemia), skin abnormalities (pigmentation changes) and hair dislocation.
Cobalt	Can cause irritation of eyes, skin and respiratory tract. Skin contact can cause allergic reactions. Acute and chronic overexposures can cause respiratory sensitization, asthma, scarring of the lungs (pulmonary fibrosis) and damage to the heart muscle (cardiomyopathy). Listed as possibly carcinogenic to humans by IARC (Group 2B).
Manganese	Chronic overexposure of dust or fumes can cause inflammation of the lung tissues, scarring of the lunges (pulmonary fibrosis), central nervous system damage, secondary Parkinson's disease and reproduction harm in males.
Silicon	Chronic overexposure of inert dusts can cause chronic bronchitis and narrowing of airways.
Chromium	Dust and fumes can cause irritation of eyes, skin and respiratory tract. Metallic chromium and trivalent chromium is not classifiable as to their carcinogenicity to humans by IARC.
Nickel	Dust and fumes can cause irritation of eyes, skin and respiratory tract. Eye contact can cause inflammation of the eyes and eyelids

(conjunctivitis). Skin contact can cause sensitization and allergic contact dermatitis. Chronic overexposures can cause perforation of the nasal septum, inflammation of the nasal passages (sinusitis), respiratory sensitization, asthma and scarring of the lungs (pulmonary fibrosis). Reviewed and not recommended for listing by NTP. Listed as possibly carcinogenic to humans by IARC (Group 2B).

Lead

Can cause irritation of eyes and upper respiratory tract. Acute overexposures can cause nausea and muscle cramps. Chronic weakness in the extremities (peripheral neuropathy), abdominal cramps, gastrointestinal tract effects, kidney damage, liver damage, central nervous system damage, damage to the blood forming organs, blood cell damage and reproductive harm. Can cause reduced fertility and fatal toxicity in pregnant women. Listed as “reasonably anticipated to be a human carcinogen” by the NTP. Listed as possibly carcinogenic to humans by IARC (Group 2B).

Some products are supplied with an oil coating or have a residual oil from the manufacturing process. Oil can cause irritation of skin. Prolonged or repeated skin contact can cause dermatitis.

11.2 Health effects associated with compounds formed during processing.

The following effects could be expected if welded, remelted or otherwise processed at elevated temperatures.

Aluminum oxide	Low health risk by inhalation. Generally considered to be biologically inert.
Zinc oxide fume	Can cause irritation of respiratory tract. Acute overexposures can cause metal fume fever (nausea, fever, chills shortness of breath and malaise).
Magnesium oxide fume	Can cause irritation of the eyes and respiratory tract. Acute exposure can cause metal fume fever (nausea, fever, chills shortness of breath and malaise).
Copper fume	Can cause irritation of the eyes, mucous membranes, and respiratory tract. Acute overexposure can cause, metal fume fever (nausea, fever, chills shortness of breath and malaise).
Cobalt compounds	Can cause irritation of eyes, skin and respiratory tract. Acute overexposures can cause allergic reactions. Acute and chronic overexposures can cause respiratory sensitization, asthma, kidney damage and damage to the heart muscle (cardiomyopathy). Listed as possibly carcinogenic to humans by IARC (Group 2B).
Manganese oxide fumes	Can cause irritation of the eyes, skin and respiratory tract. Acute overexposures can cause metal fume fever (nausea, fever, chills shortness of breath and malaise).
Iron oxide	Chronic overexposures can cause benign lung disease (siderosis). Ingestion can cause irritation of the gastrointestinal tract, bleeding, changes in the pH of the body fluids (metabolic acidosis) and liver damage.
Silica, amorphous	Acute overexposure can cause dryness of eyes, nose and upper respiratory tract.
Chromium (III) compounds	Can cause irritation of eye, skin and respiratory tract. (Not classified as carcinogenic to humans by IARC).

Chromium (VI)compounds Can cause irritation of eye, skin and respiratory tract. Skin contact can cause irritant dermatitis, allergic reactions and skin ulcers. Chronic overexposures can cause perforation of the nasal septum, respiratory sensitization, asthma, the accumulation of fluid in the lungs (pulmonary edema), lung damage, kidney damage, lung cancer, nasal cancer and cancer of the gastrointestinal tract. Listed as “Known to be human carcinogen” by the NTP. Listed as carcinogenic to humans by IARC (Group 1).

Nickel compounds Associated with lung cancer, cancer of the vocal cords and nasal cancer. Listed as “Known to be a human carcinogen” by the NTP. Listed as carcinogenic to humans by IARC (Group 1).

Lead (inorganic compounds) Listed as “reasonably anticipated to be a human carcinogen” by the NTP. Listed as probably carcinogenic to humans by IARC (Group 2A).

If the products are heated well above ambient temperatures or machines, oil vapor or mist may be generated. Oil vapor or mist can cause irritation of respiratory tract. Acute overexposures can cause bronchitis, headache, central nervous system effects (nausea, dizziness and loss of coordination) and drowsiness (narcosis).

Welding, plasma arc cutting, and arc spray metalizing can generate ozone. Ozone can cause irritation of eyes, nose and upper respiratory tract. Acute overexposure can cause shortness of breath, tightness of chest, headache, cough, nausea and narrowing of airways. Effects are reversible on cessation of exposure. Acute overexposure of high concentrations can cause respiratory distress, respiratory tract damage, bleeding and the accumulation of fluid in the lungs (pulmonary edema). Effects can be delayed up to 1-2 hours.

Additional information: Studies (inhalation) with experimental animals have found genetic damage, reproductive harm, blood cell damage, lung damage and death.

Welding fumes are listed as possibly carcinogenic to humans by IARC (Group 2B).

Additional information: In one study, occupational asthma was associated with exposures to fumes from aluminium welding.

Plasma arc cutting of aluminium can generate oxides of nitrogen. Oxides of nitrogen (NO and NO₂) can cause irritation of eyes, skin and respiratory tract. Acute overexposures can cause reduced ability of the blood to carry oxygen (methaemoglobin). Can cause cough, shortness of breath, accumulation of fluid in the lungs (pulmonary edema) and death. Effects can be delayed up to 2-3 weeks.

Chronic overexposure of nitrogen dioxide (NO₂) can cause scarring of the lungs (pulmonary fibrosis).

SECTION 12: Ecological information

12.1 Persistence and degradability

Not available.

12.2 Bioaccumulative potential

Not available.

12.3 Mobility in soil

Not relevant because of the form of the product.

12.4 Results of PBT and vPvBB assessment

Not available.

12.5 Other adverse effects

Not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Reuse or recycle material whenever possible. If reuse or recycling is not possible, disposal must be made according to local or governmental regulations.

13.2 Requirements for remelting of scrap material or ingot

Molten metal and water can be an explosive combination. The risk is greatest when there is sufficient molten metal to entrap or seal off the water. Water and other forms of contamination on or contained on scrap or remelt ingot are known to have caused explosions in melting operations. While the products may have minimal surface roughness and internal voids, there remains the possibility of moisture contamination or entrapment. If confined, even a few drops of water can lead to violent explosions.

13.3 Dross handling

Small amounts of beryllium (<0,0002% or <2 ppm) can be present in aluminum alloys either from naturally occurring beryllium in aluminum ore or as a alloying element in the aluminum recycling stream. This beryllium does not present a health hazard during processing (grinding, cutting or welding of aluminum products). However, beryllium may concentrate in the dross formed when aluminum scrap is remelted. Therefore, the potential for exposures to beryllium when handling dross must be considered. Control of airborne dust levels would be critical in reducing or eliminating this potential.

SECTION 14: Transport information

14.1 ADR (European Agreement concerning the International Carriage of Dangerous Goods by Road).

Not regulated.

14.2 RID (Regulations concerning the International Carriage of Dangerous Goods).

Not regulated.

14.3 ADN (The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways).

Not regulated.

14.4 IATA (International Air Transport Association).

Not regulated.

14.5 IMDG (International Maritime Dangerous Goods Code)

Not regulated.

14.6 Special precautions

Not regulated.

14.7 Transport in bulk according to Annex III of MARPOL 73/78 and the IBC Code

Not regulated.

14.8 General shipping information

When "Not regulated", enter the proper freight classification, MSDS Number and Product Name onto the shipping paperwork.

SECTION 15: Regulatory information

15.1 Regulations / legislation for the substance or mixture Safety, health and environment

15.1.1 EU Regulations

*Regulation (EC) no. 1005/2009 on substances that deplete the ozone layer.
Annex II with amendments.*

Not listed.

*Regulation (EC) no. 850/2004 on persistent organic pollutants.
Annex I.*

Not listed.

*Regulation (EC) no. 689/2008 concerning the export and import of dangerous chemicals.
Annex I, Part 1.*

Not listed

*Regulation (EC) no. 689/2008 concerning the export and import of dangerous chemicals.
Annex I, Part 2.*

Not listed

*Regulation (EC) no. 689/2008 concerning the export and import of dangerous chemicals.
Annex I, Part 3.*

Not listed

*Regulation (EC) no. 689/2008 concerning the export and import of dangerous chemicals.
Annex V.*

Not listed.

*Regulation (EC) no. 166/2006
Annex II Register of releases and transfers of pollutants.*

Copper (CAS 7440-50-8).

Chromium (CAS 7440-47-3).

Lead (CAS 7439-92-1).

Regulation (EC) no. 1907/2006 REACH Article 59 (10) list of candidates in the form in which it is currently published in the ECHA.

Not listed.

15.1.2 Authorizations

Regulation (EC) no. 1907/2006 REACH Annex XIV substance for which a permit is required.

Not listed.

Regulation (EC) no. 1907/2006 REACH Annex XVII Restrictions on the marketing and use of certain dangerous substances as amended.

Not listed.

15.1.3 Restrictions on use

Regulation (EC) no. 1907/2006 Annex XVII Substances whose use and placing on the market has been limited.

Nickel (CAS- 7440-02-0).

Directive 2004/37 / EC on protection of workers from risks related to exposure to carcinogens and mutagens at work.

Copper (CAS- 7440-50-8).

Chromium (CAS 7440-47-3).

Directive 92/85 / EEC: measures to improve safety and health at work of pregnant workers who have recently given birth or are breastfeeding.

Not listed.

15.1.4 Other EU regulations

Directive 2012/18 / EC, if measures to prevent and limit the danger of major accidents involving dangerous substances.

Not listed.

Directive 98/24 / EC concerning protection of the health and safety risks related to chemical reactions in the work.

Not listed.

Directive 94/33 / EC on protection of minors in the workplace.

Cobalt (CAS 7440-48-4).

15.1.5 National regulations

Not Listed.

15.2 Chemical safety assessment

No assessment of the chemical safety have been implemented.

SECTION 16: Other information

This document has been prepared using data from sources considered technically reliable and the information considered to be accurate. We pose no warranties, either expresses or implied, in case the information provided herewith is accurate or not. We cannot foresee all the circumstances by which this information and its products are to be used, and user conditions are beyond its control clone. User is responsible to evaluate all available information when using this product for a particular purpose, and to comply with all federal, state, provincial and local laws, statutes and regulations.