河南明泰铝业股份有限公司

Henan Mingtai Al. Industrial Co., Ltd

Material Safety Data Sheet.

Substance: Wrought Aluminium Alloys.

1 IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY

1.1 Identification of the Substance or Preparation: Wrought Aluminium Alloys.

Trade Names: Series:1XXX, 2XXX, 3XXX, 4XXX, 5XXX, 6XXX, 7XXX and 8XXX.

1.2 Company: Henan Mingtai Al. Industrial Co., Ltd.

Huiguozhen, Gongyi, Henan, China 451283

1.3 Supplier As above.

1.4 Emergency dials: local 0371-67898611

international +86 371 67898611

2 COMPOSITION / INFORMATION ON INGREDIENTS

2.1

Elements	Symbol	Max Content WT(%)	Long Term Exposure Limit (8hr TWA) Mg/m^3		Short Term Exposure Limit (10min TWA) Mg/m^3	
			Total Inhaleable	Respirable and Fume	Total Inhaleable	Respirable and Fume
Copper	Cu	12	1	0.2	2	
Magnesium	Mg	12	(10)	(4)		(10)
Silicon	Si	26	10	4		
Iron	Fe	1.5		(5)		(10)
Manganese	Mn	3	14	1		3
Nickel	NI	3	0.5			
Zinc	Zn	14		(5)		(10)
Lead	Pb	1	0.15		4	
Tin	Sn	8	2			
Titanium	Ti	1	(10)	(4)		
Antimony	Sb	1	0.5			
Beryllium	Be	0.08	0.002			
Boron	B	Q	(10)		(20)	
Bismuth	Bi	0.02				
Chromium	Cr	0.7	0.5			
Cobalt	Co	0.6	0.1			
Lithium	Li	0.01	0.025 as LiH			
Phosphorous	P	0.015	0.1			
Sodium	Na	0.05				
Strontium	Sr	0.08				
Zirconium	Zr	0.5	5		10	
Calcium	Ca	0.2	(2)			
Silver	Ag	1.5	0.1			
Aluminium	Al	Remainder	10	4		

2.2 All elements are listed in the European Inventory Of Existing Chemical Substances.

( ) Figures in brackets are for oxides of metals.

2.3 The exposure limits are those listed in Guidance Note EH 40/98(1998) published by the UK Health and Safety Executives. The current EH40 has precedence over the information above.

2.4 During the normal handling of either solid or molten Aluminium alloys the exposure limits for the elements present in this alloy will not be exceeded.

2.5 The elements present in Aluminium foundry alloys do not present any carcinogenic or other health hazard due to their low concentrations and the chemical form in which they are present.

2.6 Where no specific short-term exposure limits is listed, the COSHH guidelines should be used. (Paragraph 32 EH40/98).

3 Hazards Identification

Aluminium in its metallic or alloy form is inert and exhibits no toxic properties to man. Silver-gray solid without an odor. Non-flammable as supplied. Small chips, fine turnings and dust from processing may ignite readily.

- Explosion/fire hazards may be present when chips, fine or dust in contact with water.
- Do not allow aluminium fines or dust to collect on the structure as it could represent a fire and or secondary explosion.
- Reacts violently with halogenated hydrocarbons and with oxidizers to produce heat.
- Aluminium fines-avoid contact with water, do not use water to clean-up spills.
- Use non-sparking tools for clean-up or natural bristle broom. Avoid generation of dust cloud of fine particles during clean up.
- Aluminium is a nuisance dust. Dust or fume from processing can cause eye, skin or upper respiratory tract irritation.

3.1 Potential Health Effects

If dusts or fume are generated by processing:

3.1.1 Eye Contact: May produce irritation.

3.1.2 Skin Contact: May produce irritation or physical abrasion of skin.

3.1.3 Inhalation: May produce irritation of upper respiratory tract.

3.1.4 Ingestion: Unknown.

- Aluminium dusts/fines are a low health risk by inhalation. For standard operations (milling, cutting, grinding). Aluminium dust should be treated as a nuisance dust as defined by ACGIH and OSHA.
- Some aluminium products are supplied with an oil coating or have residual oil from the manufacturing process. Prolong or repeated skin contact with oil may result in skin irritation, dermatitis or both.
- Welding and plasma arc cutting of Aluminium can generate ozone. Over exposure to ozone can result in mucous membrane and respiratory tract irritation. Severe over exposure can cause pulmonary edema (fluid in the lungs).
- Plasma cutting of Aluminium can generate oxides of nitrogen (NO, NO_2). Oxides of nitrogen can cause irritation of the eyes, skin and upper respiratory tract. Exposure of high levels of nitrogen oxides can cause delayed pulmonary edema(fluid in lungs) which may be fatal.
- Industry welding studies indicate Nitric Oxide exposure is below the TLV for Nitric Oxide. Welding in confined/enclosed or non-ventilated areas may present different hazards. Workplace conditions should be evaluated.
- Industry welding studies indicate that exposure to nitrogen dioxide may exceed the TLV for MIG, TIG and plasma arc welding.

3.1.5 Chronic Effects / Carcinogenicity: Aluminium is not listed by OSHA, IARC or NTP as a carcinogen.

4 First Aid Measures

First Aid for Eyes: Immediately flush with large amounts of water or saline for at least 15 minutes. Seek medical attention if irritation persists.

First Aid For Skin: For contact with aluminium fines/dust, wash with soap and water. Wash clothes before re-use.

First Aid for Inhalation: Using proper respiratory protection, immediately remove the affected person from exposure to fresh air.

5 Fire Fighting Measures

5.1 Fire and Explosion Characteristics:

Product does not present fire or explosion hazards as shipped. Small chips, fines turning and dust from processing may ignite readily.

Flash Point : ND

Flammable Limits:

UEL: ND

LEL: 40mg/L (aluminum fines).

Auto Ignition Temperature: Dust from processing aluminum may burn readily.

Hazardous Combination Products: Not known.

Sensitivity to Static Impact: ND.

Sensitivity to Static Discharge: Yes.

■Dusts or fines disperse in the air can be explosive.

■Chips, fines and dust in contact with water can generate flammable/explosive gases. Theses gases could present an explosion hazard in confined or poorly ventilated spaces.

■Moisture entrapped by molten aluminum can be explosive. Contact of molten aluminum with other metal oxides (include rust) can initiate a thermite reaction.

■Do not generate dust clouds of aluminum fines during fire fighting activities. When creating a fire break move material towards the fire. Not away from the fire as this cloud result in spread of the fire or an explosion.

Extinguishing Media: Use fire fighting methods and materials that are appropriate for surrounding fire. Use water spray on chips or turnings. For fines, dust or molten Aluminium, use Class D extinguishing agents.

DO NOT USE: halogenated extinguishing agents on small chips/fines.

DO NOT USE: water in fighting fires around molten aluminium. For molten aluminum fires, ring with sand.

S**pecial Fire Fighting procedures L:** Fire fighters should wear NIOSH approved, positive pressure, self contained breathing apparatus and full protective clothing when appropriate.

6 ACCIDENTAL RELEASE MEASURES

Leak and Spill Procedures: If molten, contain the flow using dry as and or salt flux as dam. Allow the spill to cool before remelting. For fines and chips, do not use water and use non-sparking tools to clean up.

7 Handling and Storage

Product should be kept dry. Avoid contact with sharp edges or heated metal.
Aluminium is the same Colour hot or cold. Avoid the generation of dust clouds of fine Aluminium particles.

8 Exposure Control/Personal Protection

Engineering Controls: Use adequate ventilation to control airborne emissions. See Section 5 regarding fire and explosion hazards.

Respiratory Protection: If exposure limits (TLVs, PELs, etc) are exceeded use respiratory protection.

Skin/Body Protection: Wear impervious gloves to avoid repeated or prolong skin contact with residual oils and to avoid dermatitis. Advisable to wear gloves to prevent cutting by sharp edged pieces.

Eye Protection: Safety glasses, goggles, face shield as needed to avoid eye contact.

9 Physical Data and Chemical Properties

Physical Form/Appearance Solid Form: sheet, plate, extrusion, rod, ingot etc.

Colour·····Silver gray bulk metal.

Odor·····Odorless.

Odor Threshold·····N/A.

Boiling Point·····>2595 degC.

Melting Point·····450 – 700 degC.

pH·····N/A.

Solubility in Water·····Insoluble.

Density·····2.5 – 2.9 g/cm^3.

10 STABILITY AND REACTIVITY

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

Chips, fines, dust and molten Aluminium are considerable more reactive with the following.

- **Water:** slowly generates flammable / explosive gas and heat. Generation rate is greatly increased with smaller particles(i.e. fines and dusts)
- Molten aluminum can react violently / explosively with water or moisture, particularly when the water is entrapped.
- **Heat:** Oxides at a rate dependent upon temperature and particle size.
- **Strong Oxidizers:** Violent reaction with considerable heat generation.
- **Acids and Alkalis:** Reacts to generate flammable/explosive hydrogen gas. Generation rate is greatly increased with smaller particles(e.g. fines and dusts0.
- **Halogenated compounds:** Many halogenated hydrocarbons, including halogenated fire extinguishing agents, can react violently with finely divided aluminum.
- **Iron oxide(rust) and other metal oxides eg copper and lead oxides):** A violent thermite reaction generating considerable heat can occur. Reaction with aluminum fines and dusts requires only very weak ignition sources.
- Molten aluminum can react violently without external ignition source.

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TOXICOLOGICAL INFORMATION

LD_{50} of Product:

Aluminum	–Not known.
Chromium	–Not known.
Magnesium	–oral rat 9000mg/kg body weight.
Manganese	–Not known.
Zinc	–Not known.
Silicon	–oral rat 3160mg/kg body weight.

LC_{50} of Product:

Aluminum	-Not known.
Chromium	-Not known.
Magnesium	-Not known.
Manganese	-Not known.
Zinc	-Not known.
Silicon	-Not known.

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ECOLOGICAL INFORMATION

Ecotoxicological Information: ND

Distribution: ND

Chemical Fate Information: ND

13 DISPOSAL CONSIDERATIONS

This material when discarded or disposed is not specifically listed as a hazardous waste. Under RCRA and would normally not exhibit any characteristics of hazardous waste as specified in 40 CFR Part 261.2. However, if this material is processed, mixed or contaminated with other materials, it may become regulated as hazardous waste and subject to applicable RCRA requirements.

Waste Disposal Method: For disposal of this material as non-hazardous, consult state and local industrial solid waste regulations or contact their implementing authorities for guidance.

14 TRANSPORTATION INFORMATION

DOT Shipping Name/Hazard Code: Not Regulated-enter the proper freight classification, and product name.

15 REGULATORY INFORMATION

OSHA Process Safety Standard: This material is not known to be hazardous as defined by OSHA's Process Safety Management Standard, 29 CFR 1910.119.

TSCA Status: All components listed.

CERCLA Reportable Quantity: Chromiun, Zinc and Nickel.

SARA Title III

Section 311/312 Physical and Health Categories: Immediate(acute), delayed(chronic) if particulates/fumes are generated during processing. If molten: Reactive Hazard Section 313 Toxic Chemicals: Aluminum (fume/dust), Chromium, Manganese, Zinc(fume/dust) and Nickel.

RCRA status: This material, when discarded or disposed of is not specifically listed as a hazardous waste in Federal regulations. It could become hazardous waste if it is mixed with or comes in contact with a listed hazardous waste. If it is a hazardous waste regulations in 40 CFR 262-266 and 268 may apply.

16 OTHER INFORMATION

HMIS Ratings:

Health = 2

Flammability = 1

Reactivity = 1

17 DOCUMENT INFORMATION

Preparation Date 10 Jan 2001.

Further Information.

The information in this Material Safety Data Sheet is in accordance with the latest available information Your use of this information and the use to which you put the alloy are beyond our control. This information is provided without any representation or warranty expressed or implied.

The above information is in line with latest knowledge and experiences. We intend to describe our product so as fit all safety measures required. However, we cannot assume responsibility or give assurance with regard to its effects and behavior.

References:

Acronyms:

ACGIH	American Conference of Governmental Industrial Hygienists.
AICS	Australian Inventory of Chemical Substances.
CAS	Chemical Abstract Service.
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act.
CFR	Code of Federal Regulations.
Cmpds	Compounds.
DOT	Department of Transportation.
gm/kg	grams per kilogram.
HMIS	Hazardous Materials and Information System.
IARC	International Agency Register for Cancer.
LC_{50}	Lethal Concentration (50 percent kill).
LD_{50}	Lethal Dose (50 percent kill).
LEL	Lower Explosive Limit.
mg/m^3	milligrams per cubic meter.
mg/kg	milligrams per kilogram.
mg/l	milligrams per liter.
MIG	Metal Inert Gas.
TIG	Tungsten Inert Gas.
MITI	Ministry of International Trade Industry.
N/A	Not Applicable.
ND	Not Determined.
NIOSH	National Institute of Occupational Safety and Health.
NTP	National Toxicology Program.
TLV	Threshold Limit Value.
TSCA	Toxic Substances Control Act.
TWA	Time Weighted Average.
OSHA	Occupational Safety and Health Administration.
PEL	Permissible Exposure Limits.
ppm	parts per million.
RCRA	Resource Conservation and Recovery Act.
SARA	Superfund Amendments and Reauthorization Act.
STEL	Short Term Exposure Limit.
TLVs	Threshold Limit Values.
TSCA	Toxic Substance Control Act.
UEL	Upper Explosive Limit.
$\mu g/m^3$	micrograms per cubic meter.
WHMIS	Workplace Hazardous Materials Information System.