

管理番号：SDS-GMC-001

改正No：0

最終更新年月日 2016年4月22日

東洋鋼鉄株式会社

## 安全データシート(Safety Data Sheet)

〈材料製造会社：Gulf Aluminium Rolling Mill B.S.C.〉

### 1.製品及び会社情報

・ 製品の名称：Aluminium Alloys Series 1XXX,3XXX,5XXX  
& 8XXX Rolled Product of Coil and Sheets

・ 会社名：東洋鋼鉄株式会社

・ 住所：浦安市港 72 番地

・ 担当部門：技術管理室

・ 連絡先：技術管理室 横屋 電話：047-354-5891(代)

FAX：047-354-5894

「2.」以降の項目については、次ページ以降を参照下さい。



## Material Safety Data Sheet

Date: 27<sup>th</sup> April 2016

### **SECTION 1: Identification of substance/mixture and of the supplier**

**Product name:**

Aluminium Alloys (AA) Series 1XXX, 3XXX, 5XXX &amp; 8XXX Rolled Product of Coil and Sheets.

**Manufacturer Details:**

Gulf Aluminium Rolling Mill B.S.C. (c)

North Sitra Industrial Area P.O. Box 20725, Kingdom of Bahrain Tel. (+973) 17731000

[info@garmco.com](mailto:info@garmco.com);[www.garmco.com](http://www.garmco.com)

### **SECTION 2: Hazards identification**

**Classification of the substance or mixture:**

Not classified for physical or health hazards under GHS.

**Hazard statements:****Precautionary statements:**

If medical advice is needed, have product container or label at hand

Keep out of reach of children

Read label before use

Do not eat, drink or smoke when using this product

Wear protective gloves/protective clothing/eye protection/face protection

Protect from moisture

**Other Non-GHS Classification:**

WHIMS, NFPA &amp; HIMS

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Gulf Aluminium Rolling Mill Co. B.S.C.(c)  
North Sitra Industrial Area, P. O. Box 20725, Kingdom of Bahrain, Tel. (+973) 1773 1000 / Fax. (+973) 1773 0542  
[info@garmco.com](mailto:info@garmco.com) [www.garmco.com](http://www.garmco.com)

**SECTION 3: Composition/Information on Ingredients****BASE METAL** (ALL VALUES ARE EXPRESSED AS WEIGHT PERCENT AND ARE APPROXIMATES)

CHEMICAL Symbol	CAS NUMBER	BY WEIGHT %
Aluminium (Base metal)	7429-90-5	90-99.7
<b>Alloying Elements:</b>		
Zn	7440-66-6	0-8.0
Cu	7440-50-8	0-6.0
Ni	7440-02-0	0-2.0
Mg	7439-95-4	0-1.5
Mn	7439-96-5	0-1.5
Si	7440-21-3	0-1.2
Fe	7439-89-6	0-1.0
Bi	7440-69-9	0-0.7
Pb	7439-92-1	0-0.7
B	7440-42-8	0.06 max
Co	7440-48-4	0-0.6
V	7440-62-2	0.05 max
Ti	7440-32-6	0-0.2

Note: For exact composition, refer to analysis or specifications.

**SECTION 4: First aid measures****Description of first aid measures (Mainly for powder or dross form)**

**After inhalation:** Move exposed individual to fresh air. Loosen clothing as necessary and position individual in a comfortable position. Seek medical advice if discomfort or irritation persists. If breathing difficult, give oxygen.

**After skin contact:** Wash affected area with water for at least 15 minutes. Seek medical attention if irritation persists or if concerned.

**After eye contact:** Protect unexposed eye. Rinse/flush exposed eye(s) gently using water for 15-20 minutes. Remove contact lens (es) if able to do so during rinsing. Seek medical attention if irritation persists or if concerned.

**After swallowing:** Rinse mouth thoroughly. Do not induce vomiting. Seek medical attention immediately. Have exposed individual drink sips of water

**Most important symptoms and effects, both acute and delayed:**

Irritation, Nausea, Headache, Shortness of breath;

**Indication of any immediate medical attention and special treatment needed:**

If seeking medical attention, provide MSDS document to physician. Treat patient symptomatically.

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Gulf Aluminium Rolling Mill Co. B.S.C.(c)

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## SECTION 5: Firefighting measures

### Extinguishing media

**Suitable extinguishing agents:** If in laboratory setting, follow laboratory fire suppression procedures. Use appropriate fire suppression agents for adjacent combustible materials or sources of ignition. Smother with suitable dry powder for extinction. (Pressure from this media may cause severe dusting)

**For safety reasons unsuitable extinguishing agents:** Do not use water.

### Special hazards arising from the substance or mixture:

Combustion products may include metallic oxides or other toxic vapours. Combustible solid, easily ignited; may cause explosions.

### Advice for firefighters:

**Protective equipment:** Use *NIOSH*-approved respiratory protection/breathing apparatus. Wear fire/flams resistant/retardant clothing.

**Additional information (precautions):** Use spark-sprout tools and explosion-proof equipment.

## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures:

Wear protective equipment. Use respiratory protective device against the effects of fumes/dust/aerosol. Keep unprotected persons away. Ensure adequate ventilation. Keep away from ignition sources. Protect from heat. Stop the spill, if possible. Contain spilled material by diking or using inert absorbent. Transfer to a disposal or recovery container.

### Environmental precautions:

Prevent from reaching drains, sewer or waterway. Collect contaminated soil from characterization per Section 13

### Methods and material from containment and up:

If in a laboratory setting, follow Chemical Hygiene Plan procedures. Place into properly labelled containers for recovery or disposal. If necessary, use trained response staff/contractor. Avoid contact with skin, eyes and clothing. Vacuum or sweep up material and place into a suitable, dry disposal container. Always obey local regulations.

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Gulf Aluminium Rolling Mill Co. B.S.C.(c)  
North Sitra Industrial Area, P. O. Box 20725, Kingdom of Bahrain, Tel. (+973) 1773 1000 / Fax. (+973) 1773 0542  
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## SECTION 7: Handling and storage

### Precautions for safe handling:

Follow good hygiene procedures when handling chemical materials. Wash thoroughly after Handling. Do not eat, drink, smoke, or use personal products when handling chemical substances.

If in a laboratory setting, follow chemical Hygiene Plan. Use only in well ventilated areas. Avoid generation of dust or fine particulate. Dust may form flammable or explosive mixture with air, especially when damp. Wash thoroughly after handling. Avoid contact with skin and eyes. Avoid ingestion and inhalation.

### Conditions for safe storage, including incompatibilities:

Store in a cool location. Avoid storage near extreme heat, ignition sources or open flame. Store away from foodstuffs. Store away from oxidizing agents. Store in cool, dry conditions in well-sealed containers. Keep container tightly sealed.

## SECTION 8: Exposure controls/personal protection

### Control Parameters:

7429-90-5, Aluminium (as Al) (pyrophoric powder), ACGIH TLV TWA 5 mg/m<sup>3</sup>

7429-90-5, Aluminium (as Al) (metal dust), ACGIH TLV TWA: 10 mg/m<sup>3</sup>

7429-90-5, Aluminium (as Al) (respirable), OSHA PEL TWA: 5 mg/m<sup>3</sup>

7429-90-5, Aluminium (as Al) (total), OSHA PEL TWA: 15 mg/m<sup>3</sup>

7429-90-5, Aluminium (as Al) (respirable), NIOSH REL: TWA 5 mg/m<sup>3</sup>

7429-90-5, Aluminium (as Al) (total), NIOSH REL: TWA 10 mg/m<sup>3</sup>

### Appropriate Engineering controls:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use/handling. Provide exhaust ventilation or other engineering controls to keep the airborne concentration of vapour dusts (total/respirable) below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) by for example using PPE's.

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**Respiratory protection:**

Not required under normal conditions of use. Use suitable respiratory protective device when high concentrations are present. Use suitable respiratory device when aerosol or mist is formed. For spills, respiratory protection may be advisable.

**Protection of skin:**

The glove material has to be impermeable and resistant to the product/the substance/ the preparation being used/handled. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

**Eye Protection:**

Safety glasses with side shields or goggles.

**General hygienic measures:**

The usual precautionary measures are to be adhered when handling chemicals. Keep away from food, beverages and feed sources.

Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Do not inhale gases/fumes/dust/mist/vapour/aerosols. Avoid contact with the eyes and skin.

**SECTION 9: Physical and chemical properties**

Appearance (physical state,color):	Silver-grey solid	Explosion limit lower: Explosion limit upper:	No data
Odor:	Odorises	Vapor pressure:	No data
Odor threshold:	No data	Vapor density:	No data
Ph-value:	Not Applicable	Relative density:	2.7 g/cm <sup>3</sup>
Melting/Freezing point:	660 C, 1220 F	Solubilities:	Insoluble in water
Boiling/ point/Boiling range	2327 C, 4221 F	Partition coefficient (noctanol/water):	No data
Flash point (closed cup):	No data	Auto/Self-ignition temperature:	No data
Evaporation rate:	No data	Decomposition temperature:	No data
Flammability (solid,gaseous):	No data	Viscosity	a. Kinematic: Not determined b. Dynamic: Not applicable
Density: Molecular Weight: Specific Gravity:	Not Determined 26.98 2.7020 g/cm <sup>3</sup>		

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Gulf Aluminium Rolling Mill Co. B.S.C.(c)  
North Sitra Industrial Area, P. O. Box 20725, Kingdom of Bahrain, Tel. (+973) 1773 1000 / Fax. (+973) 1773 0542  
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### SECTION 10: Stability and reactivity

**Reactivity:** Corrodes in contact with acids & other metals,

**Chemical stability:** No decomposition if used and stored according to specifications. Stable under normal temps and pressures.

**Possible hazardous reactions:** Combustible Solid, finely divided dust is easily ignited; may cause explosions.

**Conditions to avoid:** Store away from oxidizing agents, strong acids or bases. Air and moisture sensitive.

**Incompatible materials:** Strong oxidizers & acids. Halogenated hydrocarbons.

**Hazardous decomposition products:** Aluminium Oxide.

### SECTION 11: Toxicological information

<b>Acute Toxicity:</b>	
<b>Oral:</b>	LD50 rat>15900 mg/kg bw
<b>Chronic Toxicity:</b>	No additional information.
<b>Corrosion Irritation:</b>	No additional information.
<b>Sensitization:</b>	No additional information.
<b>Single Target Organ (STOT):</b>	No additional information.
<b>Numerical Measures:</b>	No additional information.
<b>Carcinogenicity:</b>	No additional information.
<b>Mutagenicity:</b>	No additional information.
<b>Reproductive Toxicity:</b>	No additional information.

**ROUTES OF ENTRY:** None for Aluminium & alloys in their natural solid form.

Prolonged skin contact with coated aluminium may cause skin irritation in sensitive individuals. Inhalation of metal particulate or elemental oxide fumes generated during welding, burning, grinding or machining may pose acute or chronic health effects.

**EYES:** High concentrations of dust may cause irritation to the eyes. Fumes can cause eye irritations. Ultra-violet radiation from welding can cause flash burns (welder's flash or pink eye).

**SKIN:** May cause skin irritations. Prolonged skin contact with coated aluminium may cause skin irritation in sensitive individuals. Workers with anemia, kidney damage, digestive, respiratory, nervous systems, pregnant women and fertile females warrant particular attention.

**INHALATION:** Dust may irritate nose and throat. If heated, aluminium fumes may cause metal fume fever, a delayed, benign, transient flu-like condition.

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Gulf Aluminium Rolling Mill Co. B.S.C.(c)  
North Sitra industrial Area, P. O. Box 20725, Kingdom of Bahrain, Tel. (+973) 1773 1000 / Fax. (+973) 1773 0542  
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**SYMPTOMS RELATED TO THE PHYSICAL, CHEMICAL AND TOXICOLOGICAL CHARACTERISTICS:**

None for Aluminium & alloys in their natural solid state

**SECTION 12: Ecological Information****Ecotoxicity:**

LC50 Fish: ctenopharyngodon idella (Grass carp, white amur) [AI 7429-90-5]: 260 ug/l/96hr

LC50 Crustacea: Daphnia magna (Water flea) [AI 7429-90-5]: 2.6 mg/L/24 hr

LC50 Fish: Oncorhynchus mykiss (Rainbow trout) [AI 7429-90-5]: 120 ug/L/96 hr; static

**Persistence and degradability:** No data available

**Bioaccumulative potential:** Bird and mammals are most likely exposed through dietary ingestion of soil or Al-contaminated foods.

No data available for aluminium & alloys in their natural solid state. However, individual components of the material have been found to be toxic to the environment. Metal dusts may migrate into soil and groundwater and be ingested by wildlife.

COMPONENT	TOXICITY TO FISH	TOXICITY TO ALGAE	TOXICITY TO MICROORGANISMS
Al	LC50 Rainbow Trout 96 hr.	-	EC50 Water Flea 24 hr. 3.5mg/l
Zn	LC50 Fathead Minnow 96 hr. 2.16-3.05mg/l	LC50 Freshwater Algae 72 hr. 0.09-0.125mg/l	EC50 Water Flea 48 hr. 0.139-0.908 mg/l
Cu	LC50 Fathead Minnow 96 hr. 0.0068-0.0156 mg/l	LC50 Freshwater Algae 72 hr. 0.09-0.125mg/l	EC50 Water Flea 48 hr. 0.03mg/l
Ni	LC50 Common Carp 96 hr. 0.18 mg/l	EC50 Freshwater Algae 72 hr. 0.18 mg/l	
Mg	-	-	-
Mn	-	-	-
Si	-	-	-
Fe	LC50 Common Carp 96 hr. 0.56 mg/l	-	-
Bi	-	-	-
Pb	LC50 Common Carp 96hr. 0.44mg/l	-	EC50 Water Flea 48 hr. 0.0006mg/l
B	-	-	-
Co	-	-	-
V	-	-	-
Ti	-	-	-

**PERSISTENCE AND DEGRADABILITY:** No data available.

**BIOACCUMULATIVE POTENTIAL:** No data available.

**MOBILITY IN SOIL:** No data available

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**SECTION 13: Disposal considerations****Waste disposal recommendations:**

Product/containers must not be disposed together with household garbage. Do not allow product to reach sewage system or open water. It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (e.g. US 40CFR262.11). Consult federal state/ provincial and local regulations the proper disposal of waste material that may incorporate some amount of this product.

**SECTION 14: transport information**

**UN-Number** Not Regulated.

**UN proper shipping name** Not Regulated.

**Transport hazard class (es)**

**Packing group:** Not Regulated

**Environmental hazard:** N/A

**Transport in bulk:**

**Special precautions for user:**

**Transport regulations:**

Canadian Transportation of Dangerous Goods Regulations (TDG) March 2011. US Department of Transport (DOT) Hazardous Materials shipping Information (Title 49 - Transportation March 2011).

**SECTION 15: Regulatory information**

**REGULATORY INFORMATION:** The following listing of regulations relating to a Garmco product may not be complete and should not be solely relied upon for all regulatory compliance responsibilities.

**ADDITIONAL CANADIAN REGULATIONS:**

**WHMIS CLASSIFICATION:** Class D2A/D2B: Materials Causing Other Toxic Effects.

**DOMESTIC SUBSTANCES LIST:** The components of this material are on the federal DSL Inventory.

**OTHER CANADIAN REGULATIONS:** N/A

**ADDITIONAL U.S. REGULATIONS:**

**SARA:** The components of this material are subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA – Oct. 2006), as follows:

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North Sitra Industrial Area, P. O. Box 20725, Kingdom of Bahrain, Tel. (+973) 1773 1000 / Fax. (+973) 1773 0542  
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CHEMICAL Symbol	SARA 302 (40 CFR 355, Appendix A)	SARA 304 (40 CFR Table 302.4)	SARA 313 (40 CFR 372.65)	CERCLA Reportable Quantities
Al	No	No	Yes	None listed
Bi	No	No	No	None listed
B	No	No	No	None listed
Co	No	No	Yes	None listed
Cu	No	No	Yes	5,000 lb.
Fe	No	No	No	None listed
Pb	No	No	Yes	10 lb.
Mg	No	No	No	None listed
Mn	No	No	Yes	None listed
Ni	No	No	Yes	100 lb.
Si	No	No	No	None listed
Ti	No	No	No	None listed
V	No	No	Yes	None listed
Zn	No	No	No	1,000 lb.

**SARA THRESHOLD PLANNING QUANTITY:**

There are no specific Threshold Planning Quantities for the components of this material. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 lb. (4,540 kg) therefore applies, per 40 CFR 370.20.

**TSCA INVENTORY STATUS:**

The components of this material are listed on the Toxic Substances Control Act Inventory.

**CERCLA REPORTABLE QUANTITY (RQ):**

RQ's for Hazardous Substances in the Comprehensive Environmental Response, Compensation, and Liability Act are: Copper = 5000 lb. (2270 kg); Zinc = 1000 lb. (454 kg); Nickel = 100 lb. (45 kg).

**CALIFORNIA (PROPOSITION 65):**

The Lead component of this material is known in the State of California to cause cancer, and/or birth defects (or other reproductive harm). The Nickel component of this material is known in the State of California to cause cancer. The Cobalt component of this material is known in the State of California to cause cancer.

**OTHER U.S. FEDERAL REGULATIONS:** Lead is regulated under 29 CFR 1910.1025.

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North Sitra Industrial Area, P. O. Box 20725, Kingdom of Bahrain, Tel. (+973) 1773 1000 / Fax. (+973) 1773 0542  
info@garmco.com www.garmco.com

**ADDITIONAL EUROPEAN UNION REGULATIONS:****RoHS & WEEE:**

This MSDS follows the European Union Directive "Restriction on the Use of Certain Hazardous Substances (RoHS) In Electrical and Electronic Equipment" (2002/95/EC) and the "Waste Electrical and Electronic Equipment (WEEE)" Directive (2002/96/EC).

**Lead (Pb):**

Lead is present in this aluminium alloy at levels above the EU Directive limit of 0.1%.

Note, the EU Directive has a lead exemption limit of up to 4.0% as an alloying element in aluminium.

**Chromium VI (Cr +6):** The hexavalent oxidation state of Cr does not normally exist as part of a metal or alloy.

**SECTION 16: Other Information**

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the MSDS contains all information the Controlled Products Regulation. Note: The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material.

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منطقة شمال سيرة الصناعية ص.ب. 20725 مملكة البحرين. هاتف: +973 1773 1000 / فاكس: +973 1773 0542

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info@garmco.com www.garmco.com



### Abbreviations and Acronyms:

IMG: International Maritime Code for Dangerous Goods

PNEC: Predicted No-Effect Concentration (REACH)

CFR: Code of Federal Regulation (USA)

SARA: Superfund Amendments and Reauthorization Act (USA)

RCRA: Resource Conservation AND Recovery Act (USA)

TSCA: Toxic Substances Control Act (USA)

NPRI: National Pollutant Release Inventory (Canada)

DOT: US Department of Transportation

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

ACGIH: America Conference of Governmental Industrial Hygienists

CAS: Chemical Abstracts (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

NIOSH: National Institute for Occupational Safety and Health (USA)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

DNEL: Derived No-Effect Level (REACH)



Dr. Oday Al-Buhamad | Work Metallurgist Manager

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Off: +973 1773-1000 Ext 3343 | Dir.: +973 1773 4643

Fax: +973 1773 9085 | P.O. Box 20725 Bahrain

Email: [oday.albuhamad@garmco.com](mailto:oday.albuhamad@garmco.com) | Web Site: [www.garmco.com](http://www.garmco.com)



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 North Sitra Industrial Area, P. O. Box 20725, Kingdom of Bahrain, Tel. (+973) 1773 1000 / Fax. (+973) 1773 0542  
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