SECTION : 1 - MANUFACTURER

I. MANUFACTURER
JINDAL Aluminum limited
KIADB IND.AREA
Tumkur Road ,Dabaspet, Bangalore –562111
Karnataka.
Phone – 080-27735051/27735003
Date Issued: 18/03/2013

SECTION : 2 – MATERIAL IDENTIFICATION

TRADE NAME (Common Name or Synonym): Aluminum Foil
CHEMICAL NAME: Aluminum alloys FORMULA: Al

SECTION: 3 – MATERIAL INGREDIENTS / COMPOSITION / EXPOSUE LIMITS.

PERCENT ACGIH TLV OSHA PEL
CHEMICAL CAS NO. BY WT. (mg/m3) (mg/m3)
Aluminum (Al) 7429-90-5 * 10 (metal dust)
5 (fumes) --
Copper (Cu) 7440-50-8 *
Aluminum (Al) 7429-90-5 * 0.2 (fumes) 0.1 (fumes)
Iron (Fe) 7439-89-6 * 5 (fumes) 10 (oxide fumes)
Magnesium (mg) 7439-95-4 * 10 (oxide fumes) 15 (oxide fumes)
Manganese (Mn) 7439-96-5 * 5 (dust & compounds) 5 (fumes)
1 (fumes) (ceiling)
Silicon (Si) 7440-21-3 * 10 (total dust) --
Zinc (Zn) 7440-66-6 * 5 (oxide fumes) 5 (oxide fumes)
REMARKS: STEL FOR Mn is 3 mg/m3 (fumes) and PEL shown is ceiling.
STEL for Zn is 10 mg/m3 (fumes)
*concentrations of these ingredients in the different alloys will vary in accordance with customer Specifications and industry standards. None of these ingredients are presently listed in NTP, IARC or OSHA as being carcinogens or potential carcinogens.

SECTION: 4 – PHYSICAL & CHEMICAL DATA

MATERIAL IS AT NORMAL CONDITIONS
_____LIQUID _____X____SOLID _____GAS _____OTHER
ACIDITY/ALKALINITY: N/A VAPOR PRESSSURE (mmHg): N/A
MELT/FREEZE POINT: 1165 – 1220 Degrees Fahrenheit
SOLUBILITY IN WATER: Insoluble BOILING POINT: N/A
APPEARANCE/ODOR: Silvery/Odorless
SPECIFIC GRAVITY (water – 1): 2.70 – 2.73
VAPOR DENSITY (AIR = 1): N/A
EVAPORATION RATE (BUTYL ACETATE = 1): N/A

SECTION: 5 – HAZARDS IDENTIFICATION (HEALTH)

HEALTH – Possible Routes of Exposure
Inhalation: Not likely unless machined, welded or re-melted. Then fumes may cause irritation to nose and throat.
Ingestion: Not likely.
Skin Contact & Absorption: Absorption unlikely, but skin contact with hot aluminum (solid aluminum does not change color during heating) could cause burns. Sharp edges can cause cuts.
Eyes: Fumes may cause irritation.
Acute and Chronic Effect on Health: Other than cuts, scratches, burns, eye irritation, no lasting effects on health are known.

Health Effects of Ingredients

Manganese dust of fumes
Chromium duct and mist
Silicon, Inert dusts
Aluminium dust fines and fumes.

Health Effects of Additional compounds to be formed during processing of the material.
The following could be expected if welded, remelted or otherwise processed at relevant temperatures.

Hexavalent chromium
Magnesium oxide fumes
Manganese oxide fumes
Silica used (effect to eyes, skin etc.)
Iron oxide
Alumina (Aluminium oxide – its called as biological inert gas)
Welding fumes
Hydrogen chloride gas – Irritate to human body
Hydrogen fluoride gas

Medical condition aggravated by Exposure to the Product and Components. Like Asthma, Chronic lung disease, skin rashes and secondary Parkinson's disease.

SECTION: 6 – FIRE & EXPLOSION

Flash Point: N/A
Flammable Limits: Lowers – N/A; Upper – N/A
Extinguishing Media: Non-flammable in solid form.
Special Fire Fighting Procedures; Avoid use of water in fighting fires near molten aluminum.
Unusual Fire & Explosion Hazards: No hazard in solid state. Dust/chips from grinding/machining may react with water to produce explosive hydrogen gas or dust clouds at level greater than 0.04 oz./cu. ft. may be ignited by spark. Molten aluminum may explode on contact with water and may react violently with rust and other metal oxides (e. g. copper, iron and lead.

SECTION: 7 – CHEMICAL STABILITY & REACTIVITY

Stability: Unstable _____ Stable YES
Conditions to Avoid: See Fire & Explosion Section
Incompatibility (Materials to Avoid): Strong alkalies, strong acids, halogens, and oxidizing agents and certain halogenated hydrocarbons.
Hazardous Decomposition Products: Hydrogen – when aluminum contacts acids and alkalies or water when in chip form.
Hazardous Polymerization: May Occur _____ Will Not Occur _ X
Conditions to Avoid:

- Water therapy
- Heat generation
- Strong oxidizers
- Acids and alkalis
- Halogenated compounds
- Iron oxide and other metal oxides
- Iron powder and water

Hazardous Decomposition

Combustion products of coatings include carbon monoxide, carbon dioxide, hydrogen chloride, chlorinated hydrocarbons, hydrogen fluoride and partially oxidized hydrocarbons.

SECTION: 8 – ENVIRONMENTAL & DISPOSAL CONSIDERATIONS

Spill or Leak Procedures; N/A
Waste Disposal Method: Re-melt clean, dry scrap – if necessary to dispose of, act in accordance with all
Applicable Federal, State and local waste regulations.
Chemicals contained regulated under Section 313 of SARA Title III and 40 CFR 372 in amounts equal to or exceeding: (1) 9.1% for substance meeting OSHA definition of a carcinogen; or (2) 1.0% for all other
313 listed ingredients:
313 CAS Percentages
Alloy Listed Chemical Number by Weight
1235 Aluminum 7429-90-5 99.35 Minimum
1200 Aluminum 7429-90-5 99.0 Minimum
1100 Aluminum 7429-90-5 99.0 Minimum
3003 Aluminum 7429-90-5 96 - 99
Manganese 7439-96-5 1.0 - 1.5

8006 fe (1.2 to 2.0) - Al. Reminder
8011 fe(0.60-0.95) Si—(0.60-0.95)
5005 Mg(0.5-1.10)- Remainder

SECTION: 9 – EMERGENCY MEDICAL PROCEDURES (FIRST AIDS)

For eye contact, flush with running water; obtain medical attention if irritation persists. Remove to fresh air if fumes cause irritation.
If cuts incurred during handling, use standard first aid for cuts/scratches.
If burns suffered from touching hot aluminum or molten aluminum, use standard first aid for burns and seek medical attention.

SECTION: 10 – ACCIDENTAL RELEASE MEASURES

Small / Large spill

Collect scrap for recycling. If molten: Contain the flow using dry sand or salt flux as a dam. Do not use shovels or hand tools to halt the flow of molten aluminium. Allow the spill to cool before remelting as scrap.

SECTION: 11 – PERSONAL PROTECTIVE EQUIPMENT

Appropriate protective equipment is required when melting, casting, machining, sawing, welding or otherwise processing aluminum alloys. The nature of the processing will determine what equipment is necessary. In handling aluminum sheet, protective gloves are recommended to avoid cuts; eye protection recommended avoiding keeping foreign objects (edges, pieces, dust) out of eyes; and foot protection recommended preventing injury from heavy coils. Dust/mist respirator suggested when machining or grinding aluminum. Welder's helmet and gloves recommended when welding aluminum.

Exposure Guidelines:

General product information
Component Exposure limits.
Exposure limits for additional compounds which may be formed during processing.

SECTION: 12– ECOLOGICAL INFORMATION

Ecotoxicity

A: General Product Information

No information available for the product.

B: Component Analysis – Ecotoxicity – Aquatic Toxicity

No ecotoxicity data was found for this product's components.

Environmental Fate

No information available for the product.

SECTION: 13 - TOXICOLOGICAL INFORMATION

Health Effect of Ingredients
A : General Product Information: No information available for product.
B : Component Analysis – LD50/LC50
Manganese (7439-96-5)
Iron (7439-89-6)
Silicon (7440-21-3)
Carcinogenicity
A : General Product Information: No information available for product.
B : Component Carcinogenicity
Chromium (7440-47-3)

SECTION: 14 – HANDLING and STORAGE

Handling/Storage

Avoid generating dust. Avoid contact with sharp edges r heated metal. Hot and cold aluminium is not visually different, Hot aluminium does not necessarily glow red.

Requirements for Processes which Generate Dusts or Fumes

Local ventilation and vacuum systems must be designed to handle explosive dusts. Dry vacuums and electrostatic precipitators must not be used. Dust collection systems must be dedicated to aluminium dust only and should be clearly labeled as such. Do not co-mingle fines of aluminium with fines of iron, iron oxide (rust) or other metal oxides.

Do not allow chips, fines or dust to contact water, particularly in enclosed areas.

Avoid all ignition sources. Good housekeeping practices must be maintained.

SECTION: 15 – REGULATORY REQUIREMENTS

The Aluminum sheet coil / Circle and foil produced are of FOOD GRADE, non toxic & does not contain any harmful material of animal origin & complies to the requirements for food and Pharma application as laid down in EN 602 and EN 573-3 for aluminium alloys & Composition of aluminium foil, EN 546 for physico chemical, FDA CFR 1763910, 1783910 for food product and BIS standard IS 737 – 1991, ASTM B 479 – 92a & EU directive 2004/12/EC, 2002/72/EC and 94/62/EC for presence of lead, mercury, cadmium, arsenic and chromium (vi) less than 0.01%.

The elements like as lead (Pb), cadmium (Cd), mercury (Hg) and hexavalent chromium (Cr (VI)), tin (Sn) and selenium (Se) are neither used nor added for the production of plain sheets in various alloys.

In nature however each element is existing in an “omnipresent concentration.”

The chemical composition of the main elements is examined for each lot and the concentration of trace elements is examined on a statistical basis.

Other Regulatory requirements for producing material compliance to in below order as per guideline:
No Objection Certificate Bangalore

VAT & CST Registration
Application to Pollution - Consent from Pollution
Construction permission - Occupancy Certificate - Factory License
Excise Registration

SECTION: 16 – ADDITIONAL INFORMATION

The welding of aluminum alloys may generate carbon dioxide, carbon monoxide, ozone and nitrogen oxides. Therefore, ensure adequate ventilation including powered exhaust if necessary to remove fumes
from work area. Water and other forms of contamination or aluminum are known to cause explosions in melting operations. Avoid storing aluminum sheet and aluminum foil in wet areas or those with high humidity to prevent corrosion and, in vicinity of alkalizes, acids, halogens, oxidizing agents and certain halogenated hydrocarbons, to prevent chemical attack. Aluminum sheet and aluminum foil do not change
Color on being heated; so do not touch metal suspected of being hot.
The information in this MSDS is given in good faith from thought-to-be reliable sources; however, no warranty,
Expressed or implied, can be made.