

## MATERIAL SAFETY DATA SHEET

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**Vendor Update:** 2/7/2011  
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**MSDS Number:** N1VEA ;

### I. CHEMICAL PRODUCT IDENTIFICATION

**Product Name:** ALUMINUM METAL  
**HMIS Ratings:**  
 Health: Minimal(0)  
 Flammability: Minimal(0)  
 Instability/Reactivity: Minimal(0)

**NFPA Ratings:**  
 Health: Minimal(0)  
 Flammability: Minimal(0)  
 Instability/Reactivity: Minimal(0)

### II. COMPOSITION, INFORMATION ON INGREDIENTS

Chemical Ingredient	A.S. Number	% By Weight	ACGIH TLV TWA/STEL	OSHA PEL TWA/STEL	Other TWA/STEL	LD50	LC50
ALUMINUM	M29-90-5	80 - 99.999%					
<b>Notes</b>							
<b>Other:</b> *ALLOYING/TRACE ELEMENTS, INCLUDING: MG(7439-95-4); SI(7440-21-3); NI(7440-02-0); CR(7440-47-3); FE(7439-89-6); TI(7440-32-6); ZN(7440-66-6); CU(7440-50-8); SR(7440-24-6); SN(7440-31-5); MN(7439-96-5); B(7440-42-8).							

### III. HAZARDS IDENTIFICATION PRIMARY ROUTE OF ENTRY

**Eyes:** DUE TO PRODUCT FORM, IRRITATION IS NOT EXPECTED UNLESS CUT OR HEATED AND DUST OR FUMES ARE GENERATED. ALUMINUM DUST MAY CAUSE EYE DISCOMFORT AND IRRITATION, PAIN REDNESS AND CONJUNCTIVITIS.

**Skin:** DUE TO PRODUCT FORM, IRRITATION IS NOT EXPECTED UNLESS CUT OR HEATED AND DUST FUMES ARE GENERATED. IF HEATED, CONTACT WITH HOT SURFACE IS LIKELY TO RESULT IN BLISTERS AND BURNS. ALUMINUM DUST MAY BE ABRASIVE TO THE SKIN AND CAUSE DISCOMFORT.

**Ingestion:** THE SOLID IS REGARDED AS NOT-TOXIC AND DUE TO PRODUCT FORM INGESTION IS UNLIKELY.

**Inhalation:** ALUMINUM METAL IS ESSENTIALLY NON TOXIC. INHALING ALUMINUM DUST OR FUMES MAY BE DISCOMFORTING TO THE UPPER RESPIRATORY TRACT.

**Medical Conditions**  
**Aggravated by**  
**Exposure:**  
**Other:** GENERAL:  
 LOW TOXICITY. ALUMINUM METAL IN MOST FORMS IS NON-TOXIC. IT IS NOT READILY ABSORBED THROUGH THE SKIN OR GASTRO-INTESTINAL TRACT AND ONLY POORLY THROUGH THE LUNGS.

### IV. FIRST AID MEASURES

**Eyes:** (DUST EXPOSURE) FLUSH WELL UNDER RUNNING WATER. IF IRRITATION DEVELOPS, SEEK MEDICAL ATTENTION.

<b>Skin:</b>	IN THE CASE OF BURNS CAUSED BY CONTACT WITH HOT OR MOLTEN ALUMINUM, FLUSH THOROUGHLY WITH COLD WATER TO COOL THE AREA AND SEEK MEDICAL ATTENTION. DO NOT ATTEMPT TO REMOVE METAL ADHERING TO SKIN. NOTE THAT EXCESSIVE EXPOSURE TO COLD WATER FOLLOWING A BURN CAN LEAD TO HYPOTHERMIA. (DUST EXPOSURE) FLUSH WITH WATER AND WASH WITH SOAP AND WATER. IF IRRITATION PERSISTS, SEEK MEDICAL ATTENTION.
<b>Ingestion:</b>	SWALLOWING IS CONSIDERED AN UNLIKELY MODE OF ENTRY IN COMMERCIAL/INDUSTRIAL ENVIRONMENTS. HOWEVER, IF LARGE QUANTITIES OF FINE ALUMINUM ARE INGESTED, SEEK IMMEDIATE MEDICAL ATTENTION.
<b>Inhalation:</b>	(DUST EXPOSURE) IF IRRITATION OR PULMONARY SYMPTOMS DEVELOP LEAVE THE EXPOSURE AREA IMMEDIATELY. IF SYMPTOMS PERSIST, SEEK MEDICAL ATTENTION.

#### V. FIRE FIGHTING MEASURES

<b>Flash Point:</b>	NOT RELEVANT
<b>Unusual Fire or Explosion Hazards:</b>	ALUMINIUM MAY LOSE STRUCTURAL STRENGTH WHEN SUBJECT TO FIRE AND WILL MELT TO A HAZARDOUS LIQUID AT TEMPERATURES IN THE RANGE OF 480–660°C. THE EXACT MELTING POINT IS DEPENDENT ON THE ALLOY COMPOSITION. MOLTE ALUMINIUM MAY EXPLODE ON CONTACT WITH WATER OR MOISTURE AND MAY REACT VIOLENTY WITH RUST, CERTAIN METAL OXIDES AND NITRATES. DO NOT USE WATER BASED OR HALOGENATED EXTINGUISHING AGENTS. USE AN APPROPRIATE CLASS D FIRE EXTINGUISHER (DRY CHEMICAL POWDER) OR SMOTHER WITH DRY SAND. ALUMINIUM INGOT AND SCRAP FOR REMELTING WILL AT TIMES CONTAIN SHRINKAGE CRACKS AND SUBSURFACE CAVITIES WHICH MAY TRAP MOISTURE. UNDER CERTAIN WEATHER CONDITIONS, CONDENSATION CAN FORM ON ALUMINIUM PRODUCTS. AS A SAFETY PRECAUTION, REMOVE ANY SURFACE CONTAMINANTS AND PREHEAT ALL METAL THOROUGHLY AS SPECIFIED UNDER "PRECAUTIONS FOR USE". FAILURE TO REMOVE ALL SURFACE OR CONTAINED MOISTURE COMPLETELY MAY RESULT IN A VIOLENT EXPLOSION WHEN THE METAL IS IMMERSSED IN MOLTEN METAL. IF A PLASTIC COVER IS APPLIED TO THE IGNOT BUNDLE, IT DOES NOT GUARANTEE THAT THE INGOT WILL BE IN A DRY CONDITION. TO PREVENT EXPLOSIONS, IT SHOULD BE ASSUMED THAT IGNOT MAY CONTAIN MOISTURE AND APPROPRIATE PREHEATING SHOULD BE APPLIED TO DRIVE OFF INTERNAL AND EXTERNAL MOISTURE.

#### VI. ACCIDENTAL RELEASE MEASURES

<b>Containment/Cleanup:</b>	IN THE EVENT OF A MOLTEN METAL SPILL AVOID CONTACT WITH SKIN AND EYES. DO NOT ATTEMPT TO ARREST THE FLOW OF MOLTEN ALUMINUM WITH SHOVELS, HAND TOOLS OR FOOTWEAR. CONTAIN SPILL WITH DRY SAND.
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#### VII. HANDLING AND STORAGE

<b>Other:</b>	STORAGE AND TRANSPORT: ALUMINUM IS CONSIDERED STABLE UNDER NORMAL HANDLING CONDITIONS. KEEP ALUMINIUM METAL CLEAN AND DRY DURING TRANSPORT. STORE ALUMINUM METAL IN CLEAN, DRY, HEATED AREAS TO AVOID INGRESS OF MOISTURE OR CONTAMINANTS IN CRACKS AND CAVITIES. PREVENT CONTACT WITH ACIDS AND ALKALIS, HALOGENS, OXIDISING AGENTS AND CHLORINATED HYDROCARBONS.
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#### VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

<b>Eyes:</b>	SAFETY GLASSES OR FULL FACE MASK.
	BODY: HEAT RESISTANT CLOTHING.

<b>Skin:</b>	HEAD: APPROVED SAFETY HELMET WITH NECK PROTECTION. HANDS: HEAT RESISTANT GLOVES. FEET: SAFETY BOOTS OR SHOES WITH SPATS.
<b>Respiratory:</b>	WHERE THE EXPOSURE LIMIT TO DUST AND/OR FUMES MAY BE EXCEEDED, USE THE APPROPRIATE RESPIRATOR.
<b>Engineering:</b>	NO SPECIAL EQUIPMENT REQUIRED WHEN SMALL QUANTITIES ARE BEING HANDLED. EMISSIONS FROM REMELT FURNACES SHOULD BE DUCTED APPROPRIATE. FOR STANDARD OPERATIONS (E.G. MILLING CUTTING, GRINDING)ALUMINIUM DUST AND/OR FUMES SHOULD BE REMOVED BY APPROPRIATE DUCTING.
<b>Other:</b>	EXPOSURE LIMIT: ALUMINIUM METAL AND OXIDE: –TOTAL DUST: 10 MG/M3 –RESPIRABLE DUST 5 MG/M3 WELDING FUME: 5 MG/M3  PERSONAL PROTECTION: WHEN HANDLING MOLTEN ALUMINIUM, IT IS ESSENTIAL TO PROTECT EYES AND SKIN FROM DIRECT CONTACT. EXPOSED SKIN MAY BE AT RISK OF BURNS DUE TO RADIANT HEAT. THE ABOVE PPE IS REGARDED AS THE MINIMUM REQUIREMENT.  FLAMMABILITY: ALUMINIUM METAL IS NON FLAMMABLE. REACTION WITH ACIDS AND ALKALIS MAY GENERATE FLAMMABLE HYDROGEN GAS. FINE DUST PRESENTS AN EXPLOSION HAZARD IF DISPERSED IN AIR AT HIGH LEVELS. MELTING OPERATIONS: MOLTEN ALUMINIUM MAY REACT VIOLENTLY IF IT COMES INTO CONTACT WITH WATER. THE FOLLOWING MINIMUM GUIDELINES SHOULD BE OBSERVED PRIOR TO AND DURING MELTING OPERATIONS: –INSPECT ALL REMELT INGOT PRIOR TO CHARGING INTO A FURNACE AND REMOVE SURFACE CONTAMINATION SUCH AS WATER, ICE, SNOW, DEPOSITS OF GREASE AND OIL AND OTHER SURFACE CONTAMINATION RESULTING FROM TRANSPORT OR STORAGE. –ADEQUATELY PREHEAT AND DRY INGOT BEFORE CHARGING IT INTO A FURNACE. AS A GUIDE, THIS IS DONE BY HEATING THE IGNOTS TO 400°C THROUGHOUT. HEATING FOR 2 HOURS PER 25MM OF SECTION THICKNESS IS TYPICALLY REQUIRED TO BRING ALUMINIUM TO A UNIFORM TEMPERATURE. –PERFORM THE FURNACE CHARGING SEQUENCE IN SUCH A WAY THAT FULL SUBMERSION OF INGOTS IN MOLTEN ALUMINIUM IS AVOIDED TO PREVENT ENTRAPMENT OF MOISTURE BENEATH MOLTEN METAL.

#### IX. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	SILVER COLORED METAL
<b>Boiling Point:</b>	2450(°C)
<b>Solubility in Water:</b>	NEGLIGIBLE
<b>Specific Gravity:</b>	2.70
<b>Vapor Pressure:</b>	NEGLIGIBLE @ 25°C 1MMHG @ 1248°C
<b>Vapor Density:</b>	NOT APPLICABLE
<b>Volatile Content:</b>	VOLATILE COMPONENT: 0%
<b>Other:</b>	FLAMMIBILTIY: NON FLAMMABLE MELTING POINT RANGE: 480–660°C (DEPENDS ON COMPOSTION)

#### X. STABILITY AND REACTIVITY

#### XI. TOXICOLOGICAL INFORMATION

#### XII. ECOLOGICAL INFORMATION

**Ecotoxicity:**

**XIII. DISPOSAL CONSIDERATIONS**

**Disposal Method:** ALUMINUM METAL CAN BE RECYCLED AND REMELTED AS SCRAP.

**XIV. TRANSPORT INFORMATION**

**XV. REGULATORY INFORMATION**

**Supplemental State  
Compliance  
Information:**

**XVI. OTHER INFORMATION**

**WARRANTY INFORMATION**

THIS INFORMATION IS OFFERED IN GOOD FAITH AS TYPICAL VALUES AND NOT AS A PRODUCT SPECIFICATION. NO WARRANTY, EXPRESSED OR IMPLIED, IS HEREBY MADE. THE RECOMMENDED INDUSTRIAL HYGIENE AND SAFE HANDLING PROCEDURES ARE BELIEVED TO BE GENERALLY APPLICABLE. HOWEVER, EACH USER SHOULD REVIEW THESE RECOMMENDATIONS IN THE SPECIFIC CONTEXT OF THE INTENDED USE AND DETERMINE WHETHER THEY ARE APPROPRIATE.