



The David J. Joseph Company

Metals Group

MATERIAL SAFETY DATA SHEET ALUMINUM DEOXIDIZERS

SECTION I – GENERAL INFORMATION

MSDS NUMBER
SUPPLIER The David J. Joseph Company
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DATE PREPARED 10/19/11

----- ADDITIONAL INFORMATION -----

THIS DATA SHEET IS PREPARED AS A GUIDELINE FOR TYPICAL USES OF ALUMINUM DEOXIDIZERS. THE USER SHOULD BE AWARE THAT THE COMPOSITION OF THE ALUMINUM DEOX CAN VARY BASED UPON THE RAW MATERIALS AND PROCESSES USED TO MANUFACTURE THIS PRODUCT. THE LIST OF INGREDIENTS BELOW ARE TYPICAL INGREDIENTS THOUGHT TO BE PRESENT IN THE ALUMINUM DEOX. THIS LIST INCLUDES CONTAMINANTS THAT MAY OR MAY NOT BE PRESENT. THE PERCENTAGES GIVEN VARY FROM SHIPMENT TO SHIPMENT AND MAY NOT BE ENTIRELY ACCURATE FOR A GIVEN SHIPMENT.

IT IS SUGGESTED THAT THE USER PROTECT EMPLOYEES BY UTILIZING ENGINEERING CONTROLS THAT REDUCE EXPOSURES TO ACCEPTABLE CONCENTRATIONS. WHERE ENGINEERING CONTROLS ARE NOT FEASIBLE, APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT SHOULD BE UTILIZED.

SECTION II – HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

TRADE NAME ALUMINUM DEOXIDIZERS

INGREDIENT NAME	CAS	OSHA PEL	ACGIH TLV	OTHER	PERCENT
ALUMINUM	7429-90-5	5 MG/M3	5 MG/M3		>70
SILICON	7440-21-3	5 MG/M3	10 MG/M3		<23
TIN	7440-31-5	2 MG/M3	2 MG/M3		<20
COPPER	7440-50-8	.1MG/M3	.2MG/M3		<11
MAGNESIUM	7439-95-4	5 MG/M3	10 MG/M3		<11
LEAD	7439-92-1	.05 MG/M3	.15 MG/M3		< 9
ZINC	7440-66-6	5 MG/M3	5 MG/M3		< 9
LITHIUM	7439-93-2				< 4
CADMIUM	7440-43-9	.1MG/M3	.05MG/M3		< 3
NICKEL	7440-02-0	1MG/M3	1 MG/M3		< 3
COBALT	7440-48-4	.05 MG/M3	.05 MG/M3		< 3
IRON	7439-89-6	10 MG/M3	5 MG/M3		< 2
MANGANESE	7439-96-5	1 MG/M3	1 MG/M3		< 2

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BERYLLIUM	7440-41-7	.002 MG/M3	.002 MG/M3	< 1
SILVER	7440-22-4	.01 MG/M3	.1 MG/M3	< 1
CHROMIUM	7440-47-3	1 MG/M3	.5 MG/M3	< 1
ANTIMONY	7440-36-0	.5 MG/M3	.5 MG/M3	< 1
VANDIUM	7440-62-2	.05 MG/M3	.05 MG/M3	< 1

----- **ADDITIONAL INFORMATION** -----

ALUMINUM:	PEL = 15 MG/M3 AS A TWA FOR TOTAL DUST = 5 MG/M3 AS A TWA FOR RESPIRABLE FRACTION DUST = 5 MG/M3 AS A TWA FOR WELDING FUMES TLV = 10 MG/M3 AS A TWA FOR TOTAL DUST = 5 MG/M3 AS A TWA FOR WELDING FUMES
SILICON:	PEL = 10 MG/M3 AS A TWA FOR TOTAL DUST = 5 MG/M3 AS A TWA FOR RESPIRABLE FRACTION
COPPER:	PEL = 0.1 MG/M3 AS A TWA FOR FUME = 1 MG/M3 AS A TWA FOR DUSTS AND MISTS TLV = 0.2 MG/M3 AS A TWA FOR FUME = 1 MG/M3 AS A TWA FOR DUSTS AND MISTS
MAGNESIUM:	PEL = 10 MG/M3 AS A TWA FOR TOTAL OXIDE FUME = 5 MG/M3 AS A TWA FOR RESPIRABLE FRACTION OXIDE FUME TLV = 10 MG/M3 AS A TWA FOR TOTAL OXIDE FUME
ZINC:	PEL = 5 MG/M3 AS A TWA FOR TOTAL OXIDE FUME = 10 MG/M3 AS A STEL FOR TOTAL OXIDE FUME = 5 MG/M3 AS A TWA FOR RESPIRABLE OXIDE DUST = 10 MG/M3 AS A TWA FOR TOTAL OXIDE DUST TLV = 5 MG/M3 AS A TWA FOR TOTAL OXIDE FUME = 10 MG/M3 AS A STEL FOR TOTAL OXIDE FUME = 10 MG/M3 AS A TWA FOR TOTAL OXIDE DUST
CADMIUM:	PEL = 0.2 MG/M3 AS A TWA FOR TOTAL DUST = 0.6 MG/M3 AS A CEILING FOR TOTAL DUST = 0.1 MG/M3 AS A TWA FOR FUME = 0.3 MG/M3 AS A CEILING FOR FUME TLV = .05 MG/M3 AS A TWA FOR TOTAL DUST = .05 MG/M3 AS A CEILING FOR FUME
IRON:	PEL = 10 MG/M3 AS A TWA FOR TOTAL OXIDE FUME TLV = 5 MG/M3 AS A TWA FOR TOTAL OXIDE FUME
MANGANESE:	PEL = 1 MG/M3 AS A TWA FOR FUME = 3 MG/M3 AS A CEILING FOR FUME = 5 MG/M3 AS A CEILING FOR DUST TLV = 1 MG/M3 AS A TWA FOR FUME = 3 MG/M3 AS A CEILING FOR FUME = 5 MG/M3 AS A TWA FOR DUST
BERYLLIUM:	PEL = 0.002 MG/M3 AS A TWA = 0.005 AS A CEILING = 0.025 MG/M3 AS A 30 MINUTE PEAK PER 8 HOUR SHIFT TLV = 0.002 MG/M3 AS A TWA

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VANADIUM: PEL = 0.05 MG/M3 AS A TWA FOR RESPIRABLE OXIDE DUST AND OXIDE FUME
TLV = 0.05 MG/M3 AS A TWA FOR RESPIRABLE OXIDE DUST AND OXIDE FUME

SECTION III – CHEMICAL CHARACTERISTICS

BOILING POINT 2450 C/4450 F	MELTING POINT 660 C/1220 F	FREEZING POINT NA	SPECIFIC GRAVITY (H2O=1) 3
PERCENT VOLATILE By VOLUME NA	THEORETICAL VOC CONTENT (percent of WEIGHT) NA	WEIGHT PER GALLON NA	PH NA Conc: NA
VAPOR PRESSURE (mm of Hg) 1 @ 1284 C	VAPOR DENSITY (AIR = 1) NA	DENSITY NA	EVAPORATION RATE BASIS () NA
SOLUBILITY IN WATER INSOLUBLE	REACTIVITY IN WATER MOLTEN METAL REACTS VIOLENTLY		
APPEARANCE AND ODOR	DEPENDENT UPON SCRAP COMPOSITION, PROCESSING METHODS USED, AND PROTECTIVE COATINGS. MOST OFTEN APPEARS AS A SILVER-WHITE METAL.		

SECTION IV – FIRE AND EXPLOSION HAZARD DATA

FLASH POINT NA	METHOD NA	FLAMMABLE LIMITS IN AIR (%) UPPER: NA LOWER: NA	AUTOIGNITION TEMPERATURE NA
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NFPA CODES: HEALTH	1	HMIS CODES: HEALTH	1
FLAMMABILITY	0	FLAMMABILITY	0
REACTIVITY	0	REACTIVITY	0
OTHER	0	PROTECTION	G

EXTINGUISHER MEDIA USE CLASS D FIRE EXTINGUISHERS FOR FIRES IN DUSTS. USE FIRE EXTINGUISHING MEDIA FOR SURROUNDING MATERIALS IF LARGE PIECES OF SCRAP ARE INVOLVED.

SPECIAL FIRE FIGHTING PROCEDURES CLASS D FIRE EXTINGUISHERS FOR FIRES IN DUSTS.

UNUSUAL FIRE AND EXPOSION HAZARDS DUST PRESENTS A MODERATE HAZARD OF FIRE AND/OR EXPLOSION WHEN EXPOSED TO HEAT, FLAME, OR STRONG OXIDIZING AGENTS.

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SECTION V – REACTIVITY DATA

IS THIS CHEMICAL STABLE UNDER NORMAL CONDITIONS OF HANDLING/STORAGE (Y/N) Y
CONDITIONS TO AVOID (REGARDING STABILITY) : AVOID STORAGE OR POTENTIAL
CONTACT WITH STRONG OXIDIZING
AGENTS

INCOMPATIBILITY (MATERIALS TO AVOID) : Halocarbons; Mercury; Chlorine;
Chlorates; Bromates; Iodates; Peroxides;
Perchlorates:
Nitrates; Nitrites; Oxides; Performates:
Persulfates; Halogens; Oxides of Nitrogen;
Melted Sulfates; Sulfur Dioxide; Propylene
Sodium Hydroxide

Hazardous Decomposition Products Metal Oxide Fumes
Hazardous Polymerization Possible (Y/N)? N
Conditions to avoid (Regarding Polymerization) None

SECTION VI – HEALTH HAZARDS

Route Of Entry Inhalation, Ingestion

Signs and Symptoms of

Acute Overexposure Irritation to Eyes, Fatigue; Weakness; Lassitude;
Insomnia; Constipation; Abdominal Pain; Colic

Chronic Overexposure Pulmonary Fibrosis; Facial Pallor; Anemia; Gingival
Lead Line; Tremors; Wrist Drop; Encephalopathy;
Nephropathy; Hypotension; Aluminum Has Been
Implicated in Alzheimer Disease. Lead Cadmium,
Nicker, Beryllium, and Chromium have been implicated
as carcinogens.

Chemical Listed as a Carcinogen or Potential Carcinogen

National Toxicology Program Y
IARC Monographs Y
OSHA N

Medical Conditions Generally

Aggravated By Exposure . . . Any condition involving the GI Tract, Central Nervous
System, Kidneys, Blood, Gingival Tissue.

Additional Information

If paints and coatings have been applied to this material, fumes, and dusts produced by mechanically or thermally disturbing the coating could result in acute symptoms of metal fume fever (e.g. chills, fever, and muscle aches). cough, irritation of the eyes, nose, and upper respiratory tract, nausea, vomiting, and diarrhea. Chronic overexposure to the coatings could result in serious illnesses associated with the

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contaminant. These might include lung damage, kidney damage, central nervous system damage, and, in some instances, cancer.

Emergency and First Aid Procedures

Inhalation Remove from exposure area to fresh air immediately. If breathing has stopped, give artificial respiration. Maintain airway and blood pressure and administer oxygen if available. administration of oxygen should be performed by qualified personnel. Keep affected person warm and at rest. Get medical attention immediately.

Eye Contact Wash eyes immediately with large amounts of water. Occasionally lifting upper and lower lids, until no evidence of substance remains, approximately 15-20 minutes. Get medical attention immediately.

Skin Contact Remove contaminated clothing and shoes. Wash affected area with soap or mild detergent and large amounts of water until no evidence of substance remains. Get medical attention if significant irritation results.

Ingestion Treat symptomatically and supportively. Get medical attention immediately. If vomiting occurs, keep head lower than hips to prevent aspiration.

SECTION VII – PRECAUTIONS FOR SAFE HANDLING AND USE

Hazard Class *
U.S. Dot ID NA
UN Number NA
Na Number NA

Precautions to Be Taken

in Handling and Storage Handle solid material to prevent generation of airborne dust. Handle carefully to prevent cuts and abrasions from sharp edges.

Other Precautions Avoid dust accumulation which may be flammable or explosive.

Steps to Be Taken in Case

Material is Released or Spilled If material is in molten form, keep unnecessary people away. Isolate hazard area and deny entry. Stay upwind; keep out of low areas. Do not touch.

Steps to Be Taken in Case

Material Is Released or Spilled Do not touch or walk through spilled material; Stop leak if it can be done without risk. Do not get

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water inside container. Solid material should not present a hazard.

Waste Disposal Methods If not recycled, dispose of material in accordance with the Requirements of 40 CFR Subtitle C and other applicable Federal State and Local Regulations.

SECTION VIII – CONTROL MEASURES

Respiratory Protection . . . Select and use respirators according to OSHA Regulations 29 CFR 1910.134 (See additional information below)

Ventilation Requirements . . Local exhaust and general ventilation.

Local Exhaust Use local exhaust during welding, cutting, or melting

Mechanical Good general ventilation during handling of solid material should be used to control dusts generated.

Special NA

Other NA

Protective Gloves Gloves recommended during handling to prevent cuts and abrasions. Refer to OSHA Requirements in 29 CFR 1910, Subpart 1.

Eye Protection Safety Glasses or Goggles. Refer to OSHA requirements in 29 CFT 1910.133.

Other Protective Clothing or Equipment Safety Footwear. Refer to OSHA requirements in 29 CFR 1910, Subpart 1.

Work/Hygienic Practices. . . Good personnel hygiene habits are suggested. Refer to OSHA requirements in 19 CFT 1910.141 for general sanitation requirements.

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ADDITIONAL INFORMATION

Concentration
Less Than

Respirator Type

10 x PEL

Any air-purifying half-mask respirator including disposable equipped with HEPA particulate filter.

Any air-purifying full facepiece respirator equipped with HEPA particulate filter.

Any supplied-air respirator equipped with a half-mask and operated in a demand mode.

50 x PEL

Any air-purifying full facepiece respirator equipped with a high efficiency filter.

Any powered air-purifying respirator equipped with a tight-fitting facepiece and a high efficiency filter.

Any supplied-air respirator equipped with a full facepiece and operated in a demand (negative pressure) mode or continuous flow mode.

Any self-contained respirator equipped with a full facepiece and operated in a demand (negative pressure) mode.

1,000 X PEL

Any supplied-air respirator equipped with a half-mask and operated in a pressure demand or other positive pressure mode.

2,000 X PEL

Any supplied-air respirator equipped with a full facepiece and operated in a pressure demand or other positive pressure mode.

10,000 x PEL

Any self-contained respirator equipped with a full facepiece and operated in a pressure demand or other positive pressure mode.

Any supplied-air respirator equipped with a full facepiece operated in a pressure demand or other positive pressure mode in combination with an auxiliary self-contained breathing apparatus operated in a pressure demand or other positive pressure mode.