

# Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and  
OSHA GHS

Printing date 03.02.2015

Revision: 03.02.2015

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

- **1.1 Product identifier**
- **Trade name:** ALR – US, ALRST – US, ALRLD – US, ALRHD – US White Fused Aluminum Oxide
- **CAS Number:**  
1344-28-1
- **EC number:**  
215-691-6
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Industrial uses.
- **1.3 Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**  
U.S. Electrofused Minerals, Inc.  
600 Steel Street  
Aliquippa, PA 15001  
Phone: (800) 927-8823
- **1.4 Emergency telephone number:**  
ChemTel Inc.  
(800)255-3924, +1 (813)248-0585



## SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**  
The substance is not classified as hazardous according to the CLP regulation.
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC** Not applicable.
- **Information concerning particular hazards for human and environment:**  
The product does not have to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
- **Classification system:**  
The classification is according to the latest editions of the EU-lists, and extended by company and literature data.  
The classification is in accordance with the latest editions of international substances lists, and is supplemented by information from technical literature and by information provided by the company.
- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**  
The product is not classified as hazardous according to OSHA GHS regulations within the United States.  
This product does not have a classification according to the CLP regulation.
- **Hazard pictograms** Not Regulated
- **Signal word** Not Regulated
- **Hazard statements** Not Regulated
- **Hazard description:**
- **WHMIS-symbols:** Not hazardous under WHMIS.

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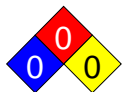
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**Trade name: ALR – US, ALRST – US, ALRLD – US, ALRHD – US White Fused Aluminum Oxide**

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- **NFPA ratings (scale 0 - 4)**



Health = 0  
Fire = 0  
Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**



Health = \*0  
Fire = 0  
Reactivity = 0

- **HMIS Long Term Health Hazard Substances**

Substance is not listed.

- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

## SECTION 3: Composition/information on ingredients

- **3.1 Substances**
- **CAS No. Description**  
1344-28-1 aluminium oxide
- **Identification number(s)**
- **EC number:** 215-691-6

## SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information:** No special measures required.
- **After inhalation:**  
Supply fresh air; consult doctor in case of complaints.  
Provide oxygen treatment if affected person has difficulty breathing.
- **After skin contact:**  
Brush off loose particles from skin.  
Clean with water and soap.  
If skin irritation continues, consult a doctor.
- **After eye contact:**  
Immediately remove contact lenses if possible.  
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**  
Rinse out mouth and then drink plenty of water.  
Do not induce vomiting; call for medical help immediately.
- **4.2 Most important symptoms and effects, both acute and delayed**  
Coughing  
Gastric or intestinal disorders.

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Breathing difficulty

- **Hazards** Danger of impaired breathing.
- **4.3 Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

## SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.
- **For safety reasons unsuitable extinguishing agents:** None.
- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
- **5.3 Advice for firefighters**
- **Protective equipment:**  
Wear self-contained respiratory protective device.  
Wear fully protective suit.
- **Additional information** No further relevant information available.

## SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**  
Use respiratory protective device against the effects of fumes/dust/aerosol.  
For large spills, wear protective clothing.  
Avoid formation of dust.  
Ensure adequate ventilation
- **6.2 Environmental precautions:** No special measures required.
- **6.3 Methods and material for containment and cleaning up:**  
Pick up mechanically.  
Send for recovery or disposal in suitable receptacles.  
Dispose contaminated material as waste according to item 13.
- **6.4 Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

## SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**  
Prevent formation of dust.  
Any unavoidable deposit of dust must be regularly removed.  
Use only in well ventilated areas.  
Avoid breathing dust.  
Do not dry clean dust covered objects and floors. Wash thoroughly with plenty of water.
- **Information about fire - and explosion protection:** No special measures required.

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- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:**  
Store away from oxidising agents.  
Store away from foodstuffs.
- **Further information about storage conditions:**  
Store in cool, dry conditions in well sealed receptacles.  
Store receptacle in a well ventilated area.  
Protect from humidity and water.  
This product is hygroscopic.
- **7.3 Specific end use(s)** No further relevant information available.

## SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**

**Ingredients with limit values that require monitoring at the workplace:**

**1344-28-1 aluminium oxide**

PEL (USA)	Long-term value: 15*; 15** mg/m <sup>3</sup> *Total dust; ** Respirable fraction
REL (USA)	Long-term value: 10* 5** mg/m <sup>3</sup> as Al*Total dust**Respirable/pyro powd./welding f.
TLV (USA)	Long-term value: 1* mg/m <sup>3</sup> as Al; *as respirable fraction
EL (Canada)	Long-term value: 1,0 mg/m <sup>3</sup> respirable, as Al
EV (Canada)	Long-term value: 10 mg/m <sup>3</sup> total dust

- **DNELs** No further relevant information available.
- **PNECs** No further relevant information available.
- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
The usual precautionary measures are to be adhered to when handling chemicals.  
Keep away from foodstuffs, beverages and feed.  
Wash hands before breaks and at the end of work.  
Avoid contact with the eyes.  
Avoid close or long term contact with the skin.  
Do not inhale dust / smoke / mist.
- **Respiratory protection:**  
Suitable respiratory protective device recommended.  
Use suitable respiratory protective device in case of insufficient ventilation.

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For spills, respiratory protection may be advisable.

- **Protection of hands:**

Wear gloves for the protection against mechanical hazards according to NIOSH or EN 388.

Gloves are advised for repeated or prolonged contact.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- **Eye protection:**



Safety glasses

- **Body protection:**

Not required under normal conditions of use.

Protection may be required for spills.

- **Limitation and supervision of exposure into the environment** No special requirements.

- **Risk management measures** No special requirements.

## SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

Form: Granulate

Colour: White

- **Odour:** Odourless

- **Odour threshold:** Not determined.

- **pH-value:** Slightly alkaline

- **Change in condition**

Melting point/Melting range: 2040 °C (3704 °F)

Boiling point/Boiling range: Undetermined.

- **Flash point:** Not applicable.

- **Flammability (solid, gaseous):** Product is not flammable.

- **Auto/Self-ignition temperature:** Not determined.

- **Decomposition temperature:** Not determined.

- **Self-igniting:** Not determined.

- **Danger of explosion:** Product does not present an explosion hazard.

- **Explosion limits:**

Lower: Not determined.

Upper: Not determined.

- **Vapour pressure:** Not applicable.

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- **Density at 20 °C (68 °F):** 3,97 g/cm<sup>3</sup> (33,13 lbs/gal)
- **Relative density:** Not determined.
- **Vapour density:** Not applicable.
- **Evaporation rate:** Not applicable.
- **Solubility in / Miscibility with water:** Insoluble.
- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
  - Dynamic:** Not applicable.
  - Kinematic:** Not applicable.
- **9.2 Other information:** No further relevant information available.

## SECTION 10: Stability and reactivity

- **10.1 Reactivity**
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used and stored according to specifications.
- **10.3 Possibility of hazardous reactions**  
Reacts with strong acids.  
Reacts with oxidising agents.  
Reacts with strong alkali.
- **10.4 Conditions to avoid:** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** Toxic metal oxide smoke

## SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** Slight irritant effect on eyes.
- **Sensitisation:** No sensitising effects known.
- **Repeated dose toxicity:** May cause damage to organs through prolonged or repeated exposure.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):**  
Contains suspect carcinogen in less than reportable quantities.

## SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** Generally not hazardous for water

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- **12.2 Persistence and degradability**  
Inorganic product, is not eliminable from water by means of biological cleaning processes.
- **12.3 Bioaccumulative potential** Does not accumulate in organisms.
- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

## SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**  
Smaller quantities can be disposed of with household waste.  
Can be reused after reprocessing.  
Contact waste processors for recycling information.  
The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes. Residual materials should be treated as hazardous.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

## SECTION 14: Transport information

- **14.1 UN-Number**
- **DOT, ADR, ADN, IMDG, IATA** Not Regulated
- **14.2 UN proper shipping name**
- **DOT, ADR, ADN, IMDG, IATA** Not Regulated
- **14.3 Transport hazard class(es)**
- **DOT, ADR, ADN, IMDG, IATA**
- **Class** Not Regulated
- **14.4 Packing group**
- **DOT, ADR, IMDG, IATA** Not Regulated
- **14.5 Environmental hazards:**
- **Marine pollutant:** No
- **14.6 Special precautions for user** Not applicable.
- **14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.
- **UN "Model Regulation":** -

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## SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **United States (USA)**
- **SARA**

- **Section 355 (extremely hazardous substances):**

Substance is not listed.

- **Section 313 (Specific toxic chemical listings):**

Substance is listed.

- **TSCA (Toxic Substances Control Act):**

Substance is listed.

- **Proposition 65 (California):**

- **Chemicals known to cause cancer:**

Present in trace quantities.

13463-67-7 | titanium dioxide

- **Chemicals known to cause reproductive toxicity for females:**

Substance is not listed.

- **Chemicals known to cause reproductive toxicity for males:**

Substance is not listed.

- **Chemicals known to cause developmental toxicity:**

Substance is not listed.

- **Carcinogenic Categories**

- **EPA (Environmental Protection Agency)**

Substance is not listed.

- **IARC (International Agency for Research on Cancer)**

Substance is not listed.

- **TLV (Threshold Limit Value established by ACGIH)**

1344-28-1 | aluminium oxide

A4

1309-48-4 | magnesium oxide

A4

- **NIOSH-Ca (National Institute for Occupational Safety and Health)**

Substance is not listed.

- **Canada**

- **Canadian Domestic Substances List (DSL)**

Substance is listed.

- **Canadian Ingredient Disclosure list (limit 0.1%)**

Substance is not listed.

- **Canadian Ingredient Disclosure list (limit 1%)**

Substance is listed.

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- **Other regulations, limitations and prohibitive regulations**

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

- **Substances of very high concern (SVHC) according to REACH, Article 57**

Substance is not listed.

- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

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

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

- **Sources**

SDS Prepared by:

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## AL — WHITE FUSED ALUMINUM OXIDE

### WHITE FUSED ALUMINA (AL<sub>2</sub>O<sub>3</sub>) FOR BONDED ABRASIVES

#### ABOUT:

AL is a white fused aluminum oxide obtained from the fusion of calcined alumina in electric arc furnaces. AL presents high purity and high capacity of edge reposition. AL is recommended for special applications where contamination is an issue to be considered.

#### TYPICAL CHEMICAL ANALYSIS

Al <sub>2</sub> O <sub>3</sub>	99.42%
Fe <sub>2</sub> O <sub>3</sub>	0.03
Na <sub>2</sub> O	0.43

#### TYPICAL PHYSICAL PROPERTIES

Crystal Structure:	α-alumina
Knoop 100 Hardness:	1900 kg/cm <sup>2</sup>
Toughness:	38% (ANSI-B74.8 R2007)
Specific Gravity:	3.94 g/cc

#### TYPES OF TREATMENT

Treatment	SHAPE	
	Block	Super Block
Not Treated	AL R	ALHD R
Red Coated (RC)*	ALRC R	ALHDRC R
Silane Treated (ST)*	ALST R	ALHDST R

Grit Size	BULK DENSITY (g/cc)		Grit Size	R	HD
	R	HD			
10	1.74 - 1.84	1.81 - 1.91	50	1.68 - 1.78	1.75 - 1.85
12	1.74 - 1.84	1.81 - 1.91	60	1.67 - 1.77	1.73 - 1.83
14	1.74 - 1.84	1.81 - 1.91	70	1.62 - 1.72	1.73 - 1.83
16	1.73 - 1.83	1.80 - 1.90	80	1.61 - 1.71	1.73 - 1.83
20	1.72 - 1.82	1.79 - 1.89	90	1.58 - 1.68	1.69 - 1.79
24	1.72 - 1.82	1.79 - 1.89	100	1.57 - 1.67	1.73 - 1.83
30	1.72 - 1.82	1.79 - 1.89	120	1.55 - 1.65	1.73 - 1.83
36	1.71 - 1.81	1.78 - 1.88	150	1.52 - 1.62	1.70 - 1.80
40	1.70 - 1.80	1.77 - 1.87	180	1.52 - 1.62	1.70 - 1.80
46	1.70 - 1.80	1.77 - 1.87	220	1.48 - 1.58	1.70 - 1.80

FEPA 44 - 1:2006

\*Treatment (RC or ST) can affect bulk density by ± 0.05 g/cm<sup>3</sup>

The information contained in this data sheet has been determined through the application of accepted engineering practice and is believed to be reliable. Since the conditions of application and use of our products are beyond our control, no warranty is expressed or implied regarding accuracy of the information, the results to be obtained from use of the product, or that such use will not infringe on any patent. This information is furnished with the express condition that you will make your own tests to determine the suitability of the product for your particular use.

# USEM

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GRUPO CURIMBABA

Updated: 04/13



# AL – WHITE FUSED ALUMINUM OXIDE

## WHITE FUSED ALUMINA (AL<sub>2</sub>O<sub>3</sub>) MICROGRITS FOR BONDED ABRASIVES

### ABOUT:

AL is a white fused aluminum oxide obtained from the fusion of calcined alumina in electric arc furnaces. AL presents high purity and high capacity of edge reposition. AL is recommended for special applications where contamination is an issue to be considered.

### TYPICAL CHEMICAL ANALYSIS

Al <sub>2</sub> O <sub>3</sub>	99.16%
Fe <sub>2</sub> O <sub>3</sub>	0.08
Na <sub>2</sub> O	0.59

### TYPICAL PHYSICAL PROPERTIES

Crystal Structure:	α-alumina
Knoop 100 Hardness:	1900 kg/cm <sup>2</sup>
Specific Gravity:	3.94 g/cc

### GRIT SIZE SPECIFICATIONS

Grit	Ds3 Maximum	Ds50		Ds94 Minimum
		Minimum	Maximum	
F230	82.0	50.0	56.0	34.0
F240	70.0	42.5	46.5	28.0
F280	59.0	35.0	38.0	22.0
F320	49.0	27.7	30.7	16.5
F360	40.0	21.3	24.3	12.0
F400	32.0	16.30	18.30	8.0
F500	25.0	11.8	13.8	5.0
F600	19.0	8.3	10.3	3.0
F800	14.0	5.5	7.5	2.0
F1000	10.0	3.7	5.3	1.0
F1200	7.0	2.5	3.5	1.0

FEPA 42 - 2:2006  
\*Other grit sizes available upon request



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Updated: 04/13

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