

1. IDENTIFICATION OF SUBSTANCE

Name of the Material: Concentrated Peruvian Andalusite Mineral
Common Name: Alluvial Andalusite
Suitable use: Refractory Raw Material
Name of the Product: PREMIUM ANDALUSITE (COARSE/FINE GRAIN)
Similar products: Kyanite, Sillimanite, Bauxite Andalucita S.A.
Manufacturer: Av. Materiales 2828, Callao 3, Lima-Peru
 Phone: (51) (1) 614-7600
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Date of Emission: March 4th, 2008
Date of Revision: May 1st, 2014

2. COMPOSITION / DATA ON COMPONENTS

Chemical characterization

· **Description:** Mixture of the substances listed below with non-hazardous additions.

· Components:

INGREDIENTS	WEIGHT (%)	OSHA PEL (Only for Dust)
SiO ₂ Silicon dioxide	39-41	6 mg/m ³
Al ₂ O ₃ Alumina	58-60	10mg/m ³ (total dust)
Fe ₂ O ₃ Iron oxide	0.5-1.0	10 mg/m ³ (as Fe)

All of the ingredients are hard solids and not powders (NON DUSTY INGREDIENTS).

The PEL values are based on an 8-hour sampling average. The substances regulated by OSHA are particulates; otherwise they are not regulated. The established PEL value is 15 mg/m³ of total powder, and 5 mg/m³ of the breathable fraction.

Smaller quantities of silicates (non-free crystalline sílica), oxides and/or vitreous phases can be present but they are not considered an inhalation risk .

3. HAZARDS IDENTIFICATION

Hazard description: Non-toxic

Medical conditions aggravated by exposure o the product:

The primary entrance route of the fine particles of this product is through inhalation and through the skin, but not by other means, as by ingestion. The potential health hazard can be the irritation of the eyes, of the skin, or of the breathing tract. The chronic effects are: red eyes, dermatitis, or pneumoconiosis. None of the ingredients described in Section 2 are carcinogenic.

Information pertaining to particular dangers for man and the environment:

The product must be labelled in accordance of the latest version of the calculation procedures of the "General Classification guidelines for preparations of the EU".
Can be irritating to eyes, respiratory system and skin.

NFPA ratings (scale 0-4) Health = 1, Fire = 0, Reactivity = 0
HMIS Classification Health = 1, Fire = 0, Reactivity = 0

HEALTH HAZARD 4 - Deadly 3 - Extreme Danger 2 - Hazardous 1 - Slightly Hazardous 0 - Normal Material	FIRE HAZARD - Flash Point 4 - Below 73F 3 - Below 100F 2 - Below 200F 1 - Above 200F 0 - Will Not Burn
SPECIFIC HAZARD OXY - Oxidizer ACID - Acid ALK - Alkali COR - Corrosive *W- Use NO WATER ☢ - Radiation Hazard	REACTIVITY 4 - May Detonate 3 - Shock and Heat May Detonate 2 - Violent Chemical Change 1 - Unstable If Heated 0 - Stable

4. FIRST AID MEASURES

After inhalation: Move to fresh air; consult doctor if needed.

After skin contact: Immediately wash with water and soap and rinse thoroughly.

After eye contact: Flush eyes with water for 15 minutes. If irritation persists, consult a doctor.

After swallowing: This product is intended for industrial applications; in the unlikely event that this product is swallowed, a physician should be consulted.

5. FIRE FIGHTING MEASURES

Suitable extinguishing agents: Use fire fighting measures that suit the environment.

Protective equipment: No special measures required.

6. ACCIDENTAL RELEASE MEASURES

Pick up the grains and return them to their respective bags. If powder was generated, gather it by means of a soft sweeping or by means of aspiration with a vacuum machine. People doing this work must use the appropriate protectors as specified in Section 8. The uncleaned materials should be disposed of according to that specified in the Section 13.

7. HANDLING & STORAGE

Information for safe handling: Ensure good ventilation/exhaust at the workplace. Avoid formation of dust.

Information on protection against explosions and fires: Keep respiratory protective device available.

Storage:

- No special requirements.
- Information about storage in one common storage facility: Not required.
- Further information about storage conditions: Store product inside, avoiding extreme weather conditions.

8. EXPOSURE CONTROLS & PERSONAL PROTECTION

· **Engineering Controls:** Ventilation Systems and control processes may be necessary in order to maintain the contamination levels of the powders of this product during their use within the levels OSHA of Section 2.

· **General protective and hygienic measures:** Keep away from foodstuffs, beverages and food. Wash hands before work breaks and at the end of work. Store protective clothing separately. Avoid contact with the eyes and skin.

· **Breathing equipment:** NIOSH approved respirators should be used when dust is present. A respiratory protection program should be implemented if exposures exceed OSHA PEL's.

· **Protection of hands:** Protective gloves recommended. The glove material must be impermeable and resistant to the product. In the absence of tests, no recommendation on the glove material can be given for this product or its preparation. Selection of the glove material to be based on consideration of the penetration times, rates of diffusion, wear and degradation.

· **Eye protection:** Safety glasses with side shields recommended

9. PHYSICAL & CHEMICAL PROCESS

Form: Solid- Coarse grains

Color: Light Pink

Odor: No specific odor.

Density (H₂O=1): 3,04–3,08

Solubility in / Miscibility with Water: Insoluble.

Melting point/Melting range: Over 2000 °C

Boiling point/Boiling range: Undetermined.

Flash point: Not applicable.

Auto igniting: Product is not self-igniting.

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

10. STABILITY & REACTIVITY

Chemical stability: This product is stable under normal conditions of shipment, storage and processing.

Condition to Avoid: None.

Incompatible materials: It can react with strong acids such as hydrofluoric acid.

Risky decomposition or Decomposition products : None.

Risky polymerization: Not applicable.

11. TOXICOLOGICAL INFORMATION

Just as has been indicated above, the coarse ingredients of this product are not toxic, neither carcinogenic in the state in which they are shipped. However, in a very fine state it can affect the eyes and the breathing system.

12. ECOLOGICAL INFORMATION

In the event of accidental spillage, it is unlikely that there would be echotoxicity or environmental damage because of the product.

13. DISPOSAL CONSIDERATION

Recommendation for Disposal of Product: As sold, this product is not RCRA hazardous. Final use condition must be evaluated prior to disposal. Dispose of waste product in accordance with Federal, State and Local regulations. Dispose according to 40CFR 261 & 262.

14. TRANSPORT INFORMATION

DOT regulations:

- Hazard class: -,
- Land transport ADR/RID (cross-border):-,
- ADR/RID class: -,
- Maritime transport IMDG:-,
- IMDG Class: -,
- Air transport ICAO-TI and IATA-DGR:-,
- ICAO/IATA Class: -.

Transport/Additional information: Not dangerous according to available information, but in the event of accidents, apply that specified in Section 6.

15. REGULATION

Andalucita S.A., as it has been specified above, considers that this product possess a risk only as the OSHA defines it in the Hazardous Standard Communications (29 CFR 1910.1200).

16. OTHER INFORMATION

This MSDS contains information and recommendations of reliable origin. All data shown is subject to reasonable variations; it is submitted at the buyer's request and it is not considered as part of any contract or sale condition.

This MSDS is only applicable to the product in its original state since its characteristics might be changed as per the application to which it has been subject. The buyer is responsible for determining the security, toxicity and applicability of the product under his own operational conditions. The buyer is also responsible for the distribution of MSDS Data to employees and direct users of the product.

Andalucita S.A. is not legally responsible for any loss or damage that occurs direct or indirectly from the use of this product, and does not assume any obligation or legal responsibility for the trust put into the information contained in this document.