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1) PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identification:

Common name: Rolled Preweathered Zinc with mineral pigments
Trade name: elZinc Rainbow®
Chemical Formula Zn

1.2 Main uses:

Sheets and strips for building applications (façades, roofs, roof drainage systems, interior design)

1.3 Company identification:

Company's name: ASTURIANA DE LAMINADOS, S. A.
33600-Polígono de Villallana, Lena
ASTURIAS (SPAIN)

1.4 Emergency telephone numbers:

Spain:
Firefighters: 080
Ambulances, Emergency Coordination Center : 915620420
Toxicological Emergencies: 915620420
Asturiana de Laminados S.A: +34 98 411 63 31

2) COMPOSITION / INFORMATION ON INGREDIENTS

Chemical formula: Zn

Information on ingredients:

	<u>EINECS No:</u>	<u>CAS No:</u>
Zn 99,97 % mín.	231 – 175 - 3	7740-66-6

Mineral pigments are applied on its surface.

3) HAZARDS IDENTIFICATION - Potential hazards:

Hazards identified in this safety data sheet only apply in case of exposure to fumes, dust or particles of composition chemicals of this product generated by handling or treatments such as polishing, welding, heat treatment, etc.


Zinc is a metal that does not burn but may form explosive mixtures if dispersed in air as a fine powder. Contact with acids or alkalis generates flammable hydrogen gas which can accumulate in poorly-ventilated areas. DO NOT use water or foam in fire fighting. Apply dry chemical, sand or special powder extinguishing media. Zinc is relatively non-toxic and poses little immediate health hazard to personnel or the environment in an emergency situation.

Inhalation: Zinc oxide may cause irritation of the respiratory tract. Symptoms may include coughing and shortness of breath. Inhalation can cause a flu-like illness (metal fume fever). This 24 to 48 hour illness is characterized by chills, fever, aching muscles, dryness in the mouth and throat, and headaches.

Ingestion: Large oral doses of soluble salts may cause irritation of the gastrointestinal tract.

Skin Contact: Not expected to be a health hazard from skin exposure. Long exposure to zinc dust may cause dermatitis.

Eye Contact: Not expected to be a health hazard.

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Chronic Exposure: Zinc is not listed as a carcinogen by OSHA, NTP, IARC, ACGIH or the EU. (see Toxicological Information, Section 11).

Potential Environmental Effects: In the form in which the product is sold, it does not represent a significant threat to the environment. However, extended exposure in the aquatic or terrestrial environments may lead to the release of zinc in a bioavailable form. (see Ecological Information, Section 12).

EU Risk Phrase(s): Not applicable - zinc is not listed as a dangerous substance.

4) FIRST AID MEASURES

4.1 General indications:

In the case of loss of conscience, do neither give water to drink nor provoke vomiting.

4.2 By inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

4.2 By skin contact:

Dust: In case of contact, rinse skin with water. Wash clothing before reuse. Call a physician if irritation occurs.

Molten metal: Rinse contact area to solidify and cool but do not attempt to remove encrusted material or clothing. Cover burns and seek medical attention immediately.

4.3 By eye contact:

In case of contact, immediately rinse eyes with plenty of water for at least 15 minutes. Call a physician.

4.4 By ingestion:

If swallowed, call a physician immediately.

5) FIRE FIGHTING MEASURES

Fire and Explosion Hazards:


Flammability of the product: Non –flammable.

Finely-divided metallic dust or powder may form flammable or explosive dust clouds when mixed with air. Bulk metallic dust in a damp state may heat spontaneously and ignite on exposure to air. Contact with acids and alkali hydroxides results in evolution of hydrogen gas which is potentially explosive. Mixtures with potassium chlorate or ammonium nitrate may explode on impact.

Extinguishing Media: Apply dry chemical, dry sand, or special powder extinguishing media. Water may be ineffective for extinguishing a fire but should be used to keep fire-exposed containers cool. Do NOT use water or foam on molten metals.

Fire Fighting: If possible, move material from fire area and cool material exposed to flame. Apply dry chemical, sand, or special powder extinguishing media. Zinc oxide fumes may evolve in fires. Fire fighters should be fully trained and wear full protective clothing including an approved, self-contained breathing apparatus which supplies a positive air pressure within a full face-piece mask.

Flashpoint and Method: Not Applicable.

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Upper and Lower Flammable Limit:

Lower Flammable Limit (Zinc Dust): 500 g/m³

Upper Flammable Limit: Not Applicable.

Autoignition Temperature:

Approximately 680°C (dust cloud in air)

460°C (dust layer)

6) ACCIDENTAL RELEASE MEASURES


Procedures for Cleanup: Solid metal is recyclable. Vacuuming recommended for accumulated metal dust. Molten metal should be allowed to solidify prior to clean-up. Return uncontaminated spilled material to the process if possible. Place contaminated and non-recyclable material in suitable labelled containers for later disposal. Treatment or disposal of waste material in accordance with all local, regional and national requirements, as applicable.

Personal Precautions: Protective clothing, gloves, and respiratory equipment are recommended for persons exposed to potentially hazardous levels of zinc dust or fume. Close-fitting safety goggles may be necessary in some circumstances to prevent eye contact with zinc dust or fume. Where molten metal is involved, wear heat-resistant gloves and suitable clothing for protection from hot-metal splash.

Environmental Precautions: Zinc in the metallic form has limited bioavailability and poses no immediate ecological risk. However, contamination of water and soil should be prevented.

7) HANDLING AND STORAGE

- **Storage Temperatures:** Store at ambient temperature.
- **Shelf Life:** Unlimited in cover and dry areas.
- **Special Sensitivity:** None.
- **Handling/Storage Precautions:** Avoid breathing dust. Avoid getting in eyes or on skin. Wash thoroughly after handling.

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8) EXPOSURE CONTROLS / PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS (Powder and zinc oxide)

Occupational Exposure Limits considering their Daily Exposure Values (VLA-ED) and their Short Exposure values (VLA-EC):

VLA-ED: 5 mg/m³ for fume
10 mg/m³ for dust
VLA-EC: 10 mg/m³ for fume

OSHA PEL (United States) (applicable to dust without specific effect).

TWA: 15 mg/m³ 8 hour(s). Form: Total dust.

ACGIH TLV (United States).

TWA: 10 mg/m³ 8 hour(s). Form: Particulates (Insoluble) Not otherwise Specified (PNOS)

EFFECTS OF SHORT TERM OVEREXPOSURE:

ZINC OXIDE / DUST: Inhalation of high levels of zinc oxide may result in tightness of chest, metallic taste, cough, dizziness, fever, chills, headache, nausea, and a dry throat. Overexposure may produce symptoms known as metal fume fever or "zinc shakes"; an acute, self-limiting condition without recognized complications. Symptoms of metal fume fever include: chills, fever, muscular pain, nausea and vomiting. Like any finely divided particulate matter, zinc oxide may cause mechanical irritation to skin and eyes.

EFFECTS OF LONG TERM OVEREXPOSURE:


ZINC OXIDE / DUST: Chronic exposure to zinc oxide may cause respiratory tract irritation with nasopharyngitis and laryngitis.

PERSONAL PROTECTION

- **Protective Clothing:** Gloves and coveralls or other work clothing are recommended to prevent prolonged or repeated direct skin contact when zinc is processed. Eye protection should be worn where fume or dust is generated. Respiratory protection may be required where zinc oxide fume is generated. Where hot or molten metal is handled, heat resistant gloves, goggles or face shield, and clothing to protect from hot metal splash should be worn. Safety type boots are recommended.
- **Respirator:** Work ambient concentrations should be monitored and if the recommended exposure limit is exceeded, a NIOSH/MSHA approved dust respirator must be worn.
- **Ventilation:** Use local ventilation if dusting is a problem, to maintain air concentration levels below the recommended exposure limit.
- **Additional Protective Measures:** Emergency showers and eye wash stations should be available. Educate and train employees in the safe use and handling of hazardous chemicals.

9) PHYSICAL AND CHEMICAL PROPERTIES

- **Physical Form:** Solid
- **Color:** Red, blue, black, gold, brown and green
- **Odor:** Odorless
- **Boiling Point:** 906°C (1662.8 °F)
- **Melting/Freezing Point:** 420°C (788°F)
- **Solubility In Water:** Insoluble
- **Specific Gravity:** 7.14

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10) STABILITY AND REACTIVITY

- **Stability:** Stable
- **Incompatibilities:** Strong Oxidizing Agents
- **Instable Conditions:** Contact with Strong Oxidizing Agents
- **Decomposition products:** Hydrogen

11) TOXICOLOGICAL INFORMATION

- **Toxicity Data:**
 - Orl-Hmn LDLO: Not applicable
 - Ipr-Rat LD50: Not applicable
- **Chronic Toxic Effects:** This product has no known chronic effects. Repeated or prolonged exposure to this compound is not known to aggravate medical conditions.
- **Acute Toxic Effects:** Zinc oxide dust or fume can irritate the respiratory tract. Prolonged skin contact can produce a severe dermatitis called oxide pox. Exposure to high levels of dust or fume can cause metallic taste, marked thirst, coughing, fatigue, weakness, muscular pain and nausea followed by fever and chills. Severe overexposure may result in bronchitis or pneumonia with a bluish tint to the skin.

12) ECOLOGICAL INFORMATION

Zinc in the metallic form has limited bioavailability and poses no immediate ecological risk. However, processes in the environment may alter its bioavailability. In aquatic systems, zinc bio accumulates in both plants and animals. In terrestrial systems, the mobility of zinc in soil is dependent on soil conditions, such as cation exchange capacity, pH, redox potential, and chemical species present in the soil. Zinc also bio accumulates in terrestrial plants, vertebrates, and mammals, with plant uptake from soil dependent on the plant species, soil pH, and soil composition.

13) DISPOSAL CONSIDERATIONS


If material cannot be returned to process or salvage, dispose of in accordance with applicable regulations.

14) INFORMATION CONCERNING TRANSPORT

Product not regulated by ADR

15) REGULATORY INFORMATION

Labelling as per Directives CE: Not applicable, zinc metal form is not listed as a dangerous substance.

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16) OTHER INFORMATION

N.B.:

The information contained in this *Product Safety Data Sheet* is based on our current knowledge and does not represent a warranty of the properties described herein. The receiver of our product should observe, at his own responsibility, the applying rules and regulations.