



## SAFETY DATA SHEET

(According to the REACH Regulation 1907/2006/EC and Regulation (EU) 453/2010)

### **POWDER 90 / GRAIN 90**

| Date:      | Edition: | Ref:    |
|------------|----------|---------|
| 01/12/2010 | 00       | FS24-EP |

# 1. IDENTIFICATION OF THE SUBSTANCE OR THE PREPARATION AND OF THE COMPANY OR THE SOCIETY

#### 1.1.- IDENTIFIFICTION OF THE PRODUCT

Name: Trichoroisocyanuric Acid

Commercial name: Powder 90 - Grain 90

Index number under (CE) n ° 1272/2008 regulation about clasification, packaging and

labelling: 613-031-00-5 CAS Number: 87-90-1

REACH Number: The substance is a biocide and as such is not affected by REACH. The

substance has been notified to the ECHA with number 02-2119679961-22-0000

### 1.2. RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR PREPARATION AND NOT

**RECOMMENDED USES** 

**Identified Uses:** Treatment of water and of swimming pools

**Not recommended uses:** Not recommended uses have not been detected, provided that the particulars given in this safety data sheet.

#### 1.3.- COMPANY IDENTIFICATION

### **ENVASADOSD EL PIRINEO, S.L.**

C/ Binueste s/n 22600 Sabiñánigo HUESCA – ESPAÑA

#### 1.4.- EMERGENCY TELEPHONE

Toxicological Information Center: 91 562 04 20

#### 2. HAZARDS IDENTIFICATION

#### 2.1.- CLASIFICATION OF THE SUBSTANCE OR THE PREPARATION

Clasification according (CE) n  $^{\circ}$  1272/2008 regulation about clasification, packaging and labelling:

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Oxidizing solid, Category 2, H272

Acute toxicity - oral: Category 4, H302. Irritating to eyes: Category 2, H319.

Specific target organ toxicity - Single exposure, Category 3, H335.

Acute aquatic toxicity: Category 1, H400. Chronic aquatic toxicity, Category 1, H410.

H272: May intensify fire; oxidizer.

H302: Harmful if swallowed.

H319: Causes serious eye irritation.

H335: May cause respiratory irritation.

H400: Very toxic to aquatic organisms.

H410: Very toxic to aquatic life with long lasting effects.

Classification according to Directive 67/548/EEC:

O; R8: fire in contact with combustible materials.

Xn, R22: Harmful if swallowed.

R31: Contact with acids liberates toxic gas.

Xi, R36/37: Irritating to eyes and respiratory tract.

N, R50/53: Very toxic to aquatic organisms, may cause long-term effects

#### 2.2.- LABEL ELEMENTS







#### **DANGER**

H272: May intensify fire; oxidizer. H302: Harmful if swallowed.

H319: Causes serious eye irritation.

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H335: May cause respiratory irritation.

H410: Very toxic to aquatic life with long lasting effects.

EUH031: Contact with acids liberates toxic gas.

P210: Keep away from heat, sparks, open flame or hot surfaces. - No smoking.

P221: Take all necessary precautions to avoid mixing with combustible materials.

P261: Avoid breathing dust.

P273: Avoid release to the environment.

P280: Wear protective gloves / clothing / eye / face protection.

P370: In case of fire: Use water in bulk to off.

P301 + P312: IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.

P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove

contact lenses, if present and easy. Further clarification.

P337 + P313: If eye irritation persists: consult a doctor.

P403 + P233: Store in a well ventilated place. Keep container tightly closed.

P501: Dispose of contents / container in a licensed waste contractor.

#### 2.3.- OTHER HAZARDS:

PHYSICAL-CHEMICAL HAZARDS:

May react with other products releasing chlorine gas (toxic).

Promotes inflammation of combustible material.

High temperature to decompose, releasing toxic gases.

#### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1 Substances:

Name of the substance: Trichloroisocyanuric Acid

CAS Number: 87-90-1 EC Number: 201-782-8

IUPAC Name: Trichloro-1,3,5-triazinatriona

Index number under (CE) n° 1272/2008 regulation about clasification, packaging and

labelling: 613-031-00-5

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#### 4. FIRST AID MEASURES

#### 4.1. Description of first aid measures:

#### 4.1.1. If inhaled:

Remove the affected person to fresh air, keep it semi-built, at rest. Artificial respiration if necessary. Take her to the doctor if necessary.

#### 4.1.2. After contact with skin:

Wash the affected area with water for at least 15 minutes while removing contaminated clothing and shoes. Going to medical services in case of burns on the skin or to treat the irritated area.

#### 4.1.3. After eye contact:

Wash them with water for at least 15 minutes and seek medical advice immediately.

#### 4.1.4. If swallowed:

If the patient is conscious, clean and wash the lips and mouth with water. Give to drink large amounts of milk or water and seek medical advice. Do not induce vomiting.

#### 4.1.5. Personal protective equipment recommended for people who provide first aid:

Use self contained breathing apparatus for respiratory protection as well as clothing and gloves to protect skin.

#### 4.2. Major symptoms and effects, both acute and delayed

Inhalation: Sore throat, cough and nausea.

Skin contact: Redness, with a strong burning sensation and can lead to the formation of sores.

Eye contact: Severe pain and tearing with impaired vision. Ingestion: Abdominal pain, nausea and general weakness.

# 4.3. Indication of any medical attention and special treatment needed immediately dispensed

Need medical help immediately.

**Toxicology Information Service** 

Phone: 91.562.04.20

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#### 5. FIRE-FIGHITING MEASURES

#### 5.1. Extinguishing Media

Extinguishing Media:

Water in large amounts. CO2 can be used in cases of small fires.

Unsuitable extinguishing media:

Based powder ammonium salts and halogenated extinguishing agents.

#### 5.2 Special hazards arising from the substance or mixture

The product is not flammable, but may cause fire on contact with combustible materials. Decomposes at high temperatures, emitting toxic gases. Extinguish with plenty of water, small amounts can aggravate the situation. If the fire affects only part of the drums, big bags or containers, insulating them from the rest, if possible, leading to fresh air and letting it consume.

#### 5.3. Advice for fire fighting

Use self contained breathing apparatus for respiratory protection as well as clothing and gloves to protect skin





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#### **6. ACCIDENTAL RELEASES MEASURES**

#### 6.1. Personal precautions, protective equipment and emergency procedures

Avoid contact with eyes, skin and respiratory tract. Use appropriate protective equipment (See section # 8).

#### 6.2. Precautions for the environment

Prevent product from entering sewers or waterways. If the product arrives at a natural water channel, warning civil protection authorities.

#### 6.3. Methods and materials for containment and cleanup

Sweep up and remove entirely the product release. If product is not contaminated, is separated from the rest and is incorporated in the original container or other container and thoroughly clean plastic bag inside. This product can be used normally.

The product collect dust on the floor dirty will be available in the original container or other container and thoroughly clean plastic bag inside. This product should be destroyed by expert personnel using appropriate protective clothing.

The product is contaminated with water or other chemicals can not be transported, dilute immediately with plenty of water and destroyed.

#### **6.4 Reference to other sections**

See protective measures under section 8

#### 7. HANDLING AND STORAGE

#### 7.1.- HANDLING

Do not eat, drink or smoke during handling.

Avoid proximity of acidic materials, fuel or oxidized.

The containers used in handling the product must be used exclusively for that product. Label containers thoroughly.

Do not produce dust. If the amount is large enough to handle, provide a ventilation system or removing gases or dust. Keep away from other chemicals

#### 7.2.- CONDITIONS FOR SAFE STORAGE, INCLUDING POSSIBLE INCOMPATIBILITIES

**Recommended equipment**: Use plastic containers. **Incompatible materials**: wood, rubber, metals.

**Storage conditions**: cool, dry, ventilated area. Away from sources of heat. **Range / Limit of Temperature and Humidity:** Avoid temperatures above 50 °C.

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**Special conditions:** fully sealed containers, away from combustible materials. **Implementing legislation**: RD-1254/1999, control measures the risks inherent in major accidents involving dangerous substances.

#### 7.3.- SPECIFIC END USES

In use in the treatment of pool water should not be mixed in an uncontrolled manner with other products to be added to it, because they can react with each other violently

#### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

#### **8.1.- CONTROL PARAMETERS**

VLA-EC-(as chloride) 0.5 ppm 1.5 mg/m3 (INSHT)

TLV-TWA-(as chloride) 0.5 ppm 1.5 mg/m3 (ACGIH 2002)

#### **8.2.- EXPOSURE CONTROLS**

8.2.1. Engineering controls

If handling generates dust extraction systems used to maintain levels of worker exposure below recommended limits.

8.2.2. Individual protection measures, such as personal protective equipment

Respiratory protection:

Case of complete dust mask use (EN136) with chlorine filter and dust B2 P2 or P3 (EN 141). Hand protection:

Gloves for chemical hazards. (EN 374)

Eye Protection:

Use full-rimmed glasses. (EN 166)

Skin protection:

Appropriate clothing for protecting the body PPE Category III. Reference Standard (EN-340)

8.2.3. Environmental exposure controls

Prevent from entering drains and / or surface water.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

#### 9.1.- INFORMACION SOBRE PROPIEDADES FISICAS Y QUIMICAS BASICAS

Appearance (physical state and White powder or granules.

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| color)                            |  |  |
|-----------------------------------|--|--|
| Odor                              | Slight chlorine odor                                       |  |
| рН                                | 2,7-3,3  |  |
| Melting / freezing point          | 246,8°C with decomposition (UE method A.1)                 |  |
| Initial boiling point and boiling | Neteralisable  |  |
| range:                            | Not applicable   |  |
| Flash Point                       | Not applicable (it's solid)                                |  |
| Flammability (solid, gas)         | Not flammable (UE method A.10)                             |  |
| Upper / lower limits of           | No data available  |  |
| flammability or explosivity       | No data avallable  |  |
| Explosive propeties               | Not explosive (BAM appendix A1 GGSV and appendix           |  |
| Explosive properies               | GGVE 19865 Germany)  |  |
| Oxidizing properties              | Oxidizing Solid: Category 2: May intensify fire; oxidizer. |  |
| Oxidizing properties              | (EU Method A.17)   |  |
| Vapour pressure                   | <0,00002 hPa un 20 º C (Procedure de saturación del gas    |  |
| vapour pressure                   | (1985) Registro Federal Vol. 50. N º 188)                  |  |
| Relative Density                  | No data available  |  |
|                                   | 350 g / I acetone  |  |
| Solubility                        | 385 g / I ethyl acetate                                    |  |
|                                   | 70 g / I toluene   |  |
|                                   | 10,000 mg/L at 10ºC  |  |
| Solubility in water               | 14,000 mg/L at 20°C  |  |
| Dartition coefficient in          | 20,000 mg/L at 30°C  |  |
| Partition coefficient n-          | 0.94 (calculated; KOWIN v1.67)                             |  |
| octanol/water (log Pow):          | Not applicable (it's a solid)                              |  |
| Viscosity                         | Not applicable (it's a solid)                              |  |
| Vapour Density                    | No data available  |  |
| Evaporation Rate                  | No data available  |  |
| Auto-ignition temperature         | No data available  |  |
| Decomposiion Temperature          | 246,8ºC  |  |
| 9.2 ADITIONAL INFROMATION         |  |  |

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Bulk density:  $1,034 \pm 0.004 \text{ g} / \text{mL}$  (OECD 109) Settled density:  $1,097 \pm 0.004 \text{ g} / \text{mL}$  (OECD 109)

Dissociation constant: pKa1 =  $-4.49 \pm 0.2$  (QSAR, ACD / Labs) Organic Peroxide: Not classified (based on the structure) Substances and mixtures which self-heating: No data available.

Solid / Liquid pyrophoric: Not classified. The substance is stable at room temperature for

prolonged periods of time.

Corrosive to metals: No data available.

Substances and mixtures which in contact with water emit flammable gases: No data

available.

#### 10. STABILITY AND REACTIVITY

#### 10.1.- REACTIVITY

The substance presents no additional risk of reactivity shown in the following subtitle.

#### **10.2.- CHEMICAL STABILITY**

No data available

#### 10.3.- POSSIBILITY OF HAZARDOUS REACTIONS

No data available

#### **10.4.- CONDITIONS TO AVOID**

Humid conditions and temperatures above 50 º C

#### **10.5.- INCOMPATIBLE MATERIALS**

Attacks metals in general. Reacts with water (in small amounts which may wet the product, but is needed in large quantities in the fight against fires), oxidizing and reducing agents, acids, alkalis, nitrogen, ammonium salts, urea, amines, ammonium derivatives quaternary, oils, fats, peroxides, cationic surfactants, and so on

#### 10.6.- HAZARDOUS DECOMPOSITION PRODUCTS

In combination with the above products, it decomposes and releases a great amount of heat, chlorine, nitrogen trichloride, chlorine oxides, etc..

#### 11. TOXICOLOGICAL INFORMATION

#### 11.1.- TOXICOLOGICAL INFORMATION EFFECTS:

#### 11.2 ACUTE EFFECTS (ACUTE TOXICITY, IRRITATION Y CORROSIVITY)

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| 11.2.1. Oral DL50 (lethal dose 50%)                     | 787 to 868 mg / kg body weight (male and female rat) (EPA OPP 81-1) Acute oral toxicity, Category 4: Harmful if swallowed.   |
|---|--|
| 11.2.2. Skin DL50 (lethal dose 50%)                     | > 2000 mg / kg body weight (male and female rabbit) (EPA OPP 81-2) In view of the available results are not met the criteria for classification.   |
| 11.2.3. CL50 inhalation (lethal concentration 50%)      | Between 0.09 mg / L and 0.29 mg / L (male and female rats, inhalation of dust) (Equivalent to OECD 403) Solid with low volatility and particle size distribution indicates that <1% substance found in the respirable size range. In view of the available results are not met the criteria for classification |
| 11.2.4. Corrosion /Skin irritation                      | Corrosive (rabbit: Exposure 24h) (EPA OPP 81-5)  |
| 11.2.5. Serious eye damage / irritation                 | Irritating to eyes: Category 2: Causes severe eye irritation (harmonized classification). Corrosive (rabbit) (FDA 16 CFR § 1500.42)  |
| 11.2.6 Specific target organ toxicity - Single exposure | Category 3: Can irritate the respiratory tract   |
| 1   | · · · · · · · · · · · · · · · · · · ·  |

#### 11.3.- SENSIBILIZATION

Respiratory Sensitization: No data available.

Skin sensitization: No sensitizing. Guinea pig (male) (OECD 406)

#### 11.4.- REPEATED DOSE TOXICITY

Specific target organ toxicity (repeated exposure): In view of the available data do not meet

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the criteria for classification.

NOAEL: s-triazintriol monosodium salt,: 4000 ppm (males 521 mg / kg bw / d, females 717 mg / kg bw / d)

Triazintriona dichloro-s-sodium dihydrate: 1200 ppm (males 115 mg / kg bw / d, females 178 mg / kg bw / d)

Trichloro-s-triazintriona: 1200 ppm (males 114 mg / kg bw / d, females 151 mg / kg bw / d) (male and female rats, 59 days, sub-acute, oral)

#### 11.5.- CMR EFFECTS (CARCINOGENICITY, MUTAGENICITY AND TOXICITY TO REPRODUCTION)

**Carcinogenicity:** In view of the available results are not met the criteria for classification.

Negative (male and female rats, 104 weeks trial with sodium cyanurate monohydrate) (EU Method B33)

Negative (male and female mice, 104 weeks trial with sodium cyanurate monohydrate) (EU Method B33)

**Germ cell mutagenicity**: In view of the available results are not met the criteria for classification.

In vitro gene mutation in bacteria: Negative (tested with sodium cyanurate monohydrate) (EPA Section 163.84-1, 43 FR 37388)

In vitro gene mutations in mammalian cells: Negative (tested with sodium cyanurate monohydrate)

(Equivalent to EU Method B.17)

Chromosomal aberrations in vivo Study: Negative (male rat; trial with sodium cyanurate) (Equivalent to OECD 475)

**Reproductive toxicity**: In view of the available results are not met the criteria for classification.

Effects on fertility:

Three-generation study in rats (made with sodium cyanurate):

Parental NOAEL: 470 - 950 mg / kg body weight

NOAEL F1 Generation: 500 - 910 mg / kg body weight NOAEL F2 Generation: 190 - 970 mg / kg body weight

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No significant effect on survival, appearance or behavior including nesting and brood care. No reproductive effects were observed.

(Method method equivalent to EU B35)

**Developmental Effects:** 

Study in male and female rabbits during 29 days (sodium cyanurate):

Maternal toxicity NOAEL> 500 mg / kg body weight

Embryo toxicity NOAEL: 500 mg / kg body weight

No teratogenic effects are observed in the absence of maternal effects.

(U.S. EPA 83-1, equivalent to EU method B31)

Reproductive toxicity, effects on or via lactation: No data available

#### 11.6.- ASPIRATION HAZARD

No evidence of aspiration hazard

| 12. ECOLOGICAL INFORMATION                 |  |  |
|--|--|--|
| 12.1 TOXICITY                              |  |  |
| Acute Toxicity for fishes                  |  |  |
|  | Species: Salmo gairdneri.                      |  |
|  | 0.24 mg / I (96 h; freshwater, estuary, static |  |
|  | system)  |  |
| CLEO (lathal association FOO())            | (EPA OTS 797.1400)                             |  |
| CL50 (lethal concentration 50%):           | Species: Lepomis macrochirus.                  |  |
|  | 0.23 mg / I (96 h; freshwater static system)   |  |
|  | (Committee on Methods for Toxicity tests       |  |
|  | with Aquatic Organisms, 1975)                  |  |
| Chronic Toxicity for fishes                |  |  |
| NOEC (no observable effect concentration): | No data available                              |  |
| Acute Toxicity for crustaceans             |  |  |
|  | Species: Daphnia magna.                        |  |
| CE50 (Effects concentration at 50%):       | 0.21 mg / I (48 h, static system)              |  |
|  | (Acute Toxicity Tests Methods for with Fish,   |  |
|  | Macroinvertebrates and Amphibians. EPA,        |  |

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|  | 1975)  |  |
|  | Species: Daphnia magna.                        |  |
|  | 0.17 mg / I (48 h, static system)              |  |
|  | (Proposed standard practice ASTM's static      |  |
|  | acute toxicity for Conducting tests with       |  |
|  | aquatic organisms, 1975)                       |  |
| Chronic Toxicity for crustaceans               |  |  |
| NOEC (no observable effect concentration):     | No data available                              |  |
| Acute Toxicity for algae and other aquatic pla | nts  |  |
|  | Species: Chlorella pyrenoidosa, Euglena        |  |
|  | gracilis and Scenedesmus obliguus (algae).     |  |
| CE50 (Effects concentration at 50%):           | EC90: 0.5 mg / I (3 h, based on biomass)       |  |
|  | NOEC <0.5 mg / I (3 h, based on biomass)       |  |
|  | (Modified method based on ASTM E645-85)        |  |
| Toxicity data and macro-micro soil organisms   | and other environmentally relevant, such as    |  |
| bees, birds, plants                            |  |  |
|  |  |  |
| Species: Colinnus virginianus (bird)           |  |  |
| LC50: 1647 ppm (8 days, based on mortality) (E | EPA Guidelines. Subdivision E, Section 71-1)   |  |
|  |  |  |
| Species: Anas platyrhynchos (bird)             |  |  |
| LC50> 5000 ppm (8 days, based on mortality) (  | EPA Guidelines, Subdivision E, Section 71-2)   |  |
| 12.2 PERSISTENCE AND DEGRADABILITY             |  |  |
| Easily biodegradable                           | Aerobic Biodegradation: 2% after 28 days       |  |
| , 0  | (OECD 301 D)                                   |  |
|  | ATCC rapidly hydrolyzes to HOCl and cyanuric   |  |
|  | acid (CYA) in contact with water. As the free  |  |
|  | available chlorine is reduced by reaction with |  |
| Other relevant information                     | various impurities in the water turns into     |  |
|  | chloride ions and additional free chlorine is  |  |
|  | liberated from the isocyanurates chlorinated   |  |
|  | solution. Once all the chlorine has been       |  |
|  |  |  |

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|   | reduced, reaction products are stable          |  |
|---|--|--|
|   | cyanuric acid or its salts and chloride salts. |  |
|   | Cyanuric acid is easily degraded under a wide  |  |
|   | range of natural and nontoxic. Therefore it    |  |
|   | has been shown that the CYA is degraded        |  |
|   | under natural conditions.                      |  |
| 12.3 BIOACCUMULATION  |  |  |
| Bioconcentration Factor (BCF): experimental   | Not experimentable datas available             |  |
| data  | Claculated value: 3.12 (BCF v2.17)             |  |
| data  |  |  |
| Partition coefficient n-octanol/water (log  | 0.94 (calculated value; KOWIN v1.67)           |  |
| Pow):   | 0.34 (calculated value, NOVVIII VI.07)         |  |
| 12.4 MOBILITY IN SOIL   |  |  |
| No data available   |  |  |
| 12.5 RESULTS OF THE EVALUATING PBT (persistent, bioaccumulative and tóxic) and mPmB |  |  |
| (very persistent and very bioaccumulative)  |  |  |
| No data available   |  |  |
| 12.6 OTHER ADVERSE EFFECTS  |  |  |
| No data available   |  |  |

#### **13. DISPOSAL CONSIDERATIONS**

#### 13.1.- METHODS FOR THE TREATMENT OF WASTE

Keep in mind the considerations that have been discussed in the previous points about incompatibilities.

The product is disposed of in accordance with current legislation and in particular with:

- Directive 2008/98/EC of 19 November, on waste and the transposing regulations.
- Directive 94/62/EC of 20 December, on packaging and packaging waste and its subsequent amendments and regulations that transpose.
- Decision 2001/118/EC of 16 January, amending Decision 2000/532/EC as regards the Waste List
- Law 10/1998 of 21 April on Waste
- Law 11/1997 of 24 April on packaging and packaging waste and regulations that develop, RD

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#### 782/1998, of April 30

- MAM Order 304/2002, of February 8, which are published from recovery and disposal of waste and the European Waste List.

Like any other regulation in force in the European Community, State and Local, on the proper disposal of this material and empty containers of the same.

| 14. TRANSPORT INFORMATION                  |   |                 |
|--|---|-----------------|
| 14.1 ADR (by road) / RID (train)           |   |                 |
| 14.1.1 UN Number:                          | UN 2468                                 |                 |
| 14.1.2 Shipping name of the United Nations | TRICHLOROISOCYANURIC ACID DRY           |                 |
| 14.1.3 Class of hazards for transport:     | 5.1                                     | Label: 5.1      |
| 14.1.4 Packaging Group                     | II                                      |                 |
| 14.1.5. Hazards for the Environment:       | Substance hazardous for the environment | Label:          |
| 14.2 IMDG (ship)                           |   |                 |
| 14.1.1 UN Number:                          | UN 2468                                 |                 |
| 14.1.2 Shipping name of the United Nations | TRICHLOROISOCY                          | ANURIC ACID DRY |
| 14.1.3 Class of hazards for transport:     | 5.1                                     | Label: 5.1      |
| 14.1.4 Packaging Group:                    | II                                      |                 |
| 14.1.5. Hazards for the Environment:       | Substance hazardous for the environment | Label:          |
| 14.3 ICAO / IATA (air)                     |   |                 |
| 14.3.1 UN Number:                          | UN 2468                                 |                 |
| 14.3.2 Shipping name of the United Nations | TRICHLOROISOCYANURIC ACID DRY           |                 |

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| 14.3.3 Class of hazards for transport: | 5.1                                     | Label: 5.1 |
|--|---|------------|
| 14.3.4 Packaging Group:                | П                                       |            |
| 14.3.5. Hazards for the Environment:   | Substance hazardous for the environment | Label:     |
| 14.4 SPECIAL PRECAUTIONS FOR USERS     |   |            |

We must address the same information described in previous sections: ADR, RID, IMDG, ICAO / IATA

14.5.- BULK TRANSPORT UNDER LANNEX II OF MARPOL 73/78 AND THE IBC CODE

Not applicable.

#### 15. REGULATORY INFORMATION

# **15.1.-** REGULATION AND LEGISLATION IN SAFETY, HEALTH AND ENVIRONMENT FOR SPECIFIC OR MIX SIUSTANCIA

Directive 96/82/EC on the control of the risks inherent in major accidents involving dangerous substances.

Council Directive 98/24/EC of 7 April 1998 on the protection of health and safety of workers from risks related to chemical agents at work

Directive 98/8/EC of 16 February 1998 concerning the placing of biocidal products.

Royal Decree 1254/99, by approving the control measures the risks inherent in major accidents involving dangerous substances.

Royal Decree 374/2001, of April 6 on the protection of health and safety of workers from risks related to chemical agents at work.

Royal Decree 379 / 2001, which approves the regulation of chemical storage and technical instructions.

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#### 15.2.- CHEMICAL SAFETY ASSESSMENT

#### **16. OTHER INFORMATION**

Sources of information in the preparation of this MSDS:

- HANDBOOK OF REACTIVE CHEMICALS HAZARDS. 4 th Ed 1990 BRETHERIC
- INDUSTRIAL PROPERTIES DANGEROUS MATERIALS (TENTH EDITION) SAX
- HAZARDOUS CHEMICALS DATA BOOK (2nd Edition) G. Weis.
- INSHT OCCUPATIONAL EXPOSURE LIMITS / ACGIH
- IARC (International Agency for Research on Cancer).
- NIOSH (National Institute for Occupational Safety and Health).
- NTP (National Toxicology Program).
- ACGIH (American Conference of Governmental Industrial Hygienist).
- OSHA (Occupational Health and Safety Assessment)
- INSHT (National Institute for Occupational Safety and Health at Work).

#### Abbreviations used

VLA: Exposure Limit, ED: Daily exposure, EC: Short-term exposure.

TLV: Threshold Limit Value (Threshold Limit Value) TWA: Time Weighted Average (eltiempo Weighted Average), STEL: Short Term Exposure Limit (Limit of short-term exposure), C: Ceiling (Roof).

NOEL: No Observed Effect Level, NOAEL: No Adverse Effect Level; DNEL: Derived No Effect Level: PNEC: Predicted No Effect Concentration.

LC50: Lethal Concentration, 50 Percent; EC50: Effect Concentration, 50 Percent; EbC50: Effect Biomass Concentration, 50 Percent; ErC50: Rate Effect Concentration, 50 Percent;

PNEC: Predicted No Effect Concentration

DNEL: derived no effect level

Any chemical can be handled safely, if known physical and chemical properties and uses the measures and appropriate safety clothing.

The data contained in this leaflet is a guide for the user and are based on bibliographic information and experiences, trying to reflect the current state of the art but, in any way, compromise our responsibility.

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This information may not be used in place of proprietary processes.

Users must comply with the laws and regulations and, in particular, those relating to Health and Safety, Storage and Transport of Dangerous Goods.

We encourage our clients to do the appropriate testing before using the product in new areas not sufficiently experienced.

The information in this Safety Data Sheet (FDS) is based on the current state of our knowledge and in the European framework laws, state and regional level in terms of working conditions of users are outside of our control and knowledge.

The product should not be used for purposes other than those specified in section 1 without first obtaining written handling instruction. It is always the user's responsibility to take appropriate action to comply with the requirements in the legislation.