



ENVASADOS DEL PIRINEO



C/ Binueste s/n - 22600 SABIÑÁNIGO - HUESCA - Tlf: 974 483 019 - Fax: 974 483 266 - info@envasadospirineo.com
Inscrita en el Registro Mercantil de Huesca, tomo 451, libro 278, folio 1, hoja HU-5902 1º C.I.F. B2244701

SAFETY DATA SHEET

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

DCCNA 55

(Sodium Salt of Dichloroisocyanuric Acid Dihydrated)

Date:	Edition:	Ref:
01/12/2010	00	FS26-EP

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

1.1.- IDENTIFICATION OF THE PRODUCT

Name: DCCNA (sodium salt of dichloroisocyanuric dihydrate)
Commercial name: DCCNA 55
Index number under (CE) n ° 1272/2008 regulation about classification, packaging and labelling: 613-030-01-7
CAS Number: 51580-86-0
REACH Number: 01-2119489371-33-0000

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

ENVASADOS 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

Classification according (CE) n ° 1272/2008 regulation about classification, packaging and labelling:

Envasados del Pirineo S.L. C/Binueste s/n 22600 Sabiñánigo –Huesca- Spain	Tfno: +34 974 483 019 Email: info@envasadospirineo.com
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DCCNA 55

(Sodium Salt of Dichloroisocianuric Acid Dihydrated)

Date:	Edition:	Ref:
01/12/2010	00	FS26-EP

Acute toxicity - oral: Category 4, H302.

Irritating to skin: Category 4, H319.

Hazards to the aquatic environment: Acute, Category 1, H400 and chronic hazard category 1, H410

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:

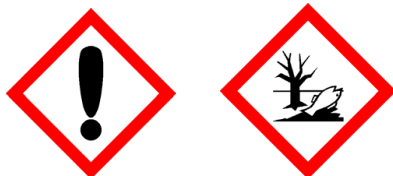
Xn, R22: Harmful if swallowed.

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 adverse effects in the aquatic environment.

2.2.- LABEL ELEMENTS



ATTENTION

H302: Harmful if swallowed.

H319: Causes serious eye irritation.

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01/12/2010	00	FS26-EP

H335: May cause respiratory irritation.

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

EUH031: Contact with acids liberates toxic gas.

P261: Avoid breathing dust.

P273: Avoid release to the environment.

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

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:

The substance does not meet the criteria for PBT or vPvB designated (see section 12).

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: sodium salt of dihydrate dichloroisocyanuric (troclosene sodium dihydrate).

CAS Number: 51580-86-0

EC Number: 220-767-7

IUPAC Name: sodium 3,5-dichloro-2,4,6-trioxa-1,3,5-triazine-1-ide, dihydrate

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

labelling: 613-030-01-7

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01/12/2010	00	FS26-EP

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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01/12/2010	00	FS26-EP

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5. FIRE-FIGHTING 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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01/12/2010	00	FS26-EP

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.

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DCCNA 55

(Sodium Salt of Dichloroisocianuric Acid Dihydrated)

Date:	Edition:	Ref:
01/12/2010	00	FS26-EP

Range / Limit of Temperature and Humidity: Avoid temperatures above 50 ° C.
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)

Human exposure (based on anhydrous substance):

For workers:

DNEL (dermal, chronic systemic effects): 2.3 mg / kg bw / day

DNEL (inhalation chronic systemic effects): 8.11 mg/m³

For the population:

DNEL (dermal, chronic systemic effects): 1.15 mg / kg bw / day

DNEL (inhalation chronic systemic effects): 1.99 mg/m³

DNEL (oral chronic systemic effects): 1.15 mg/m³

Environment (based on anhydrous substance):

PNEC (freshwater): 0.00017 mg / L (based on the lowest aquatic toxicity Daphnia magna EC50 = 0.17 mg / L and safety factor 1000).

PNEC (sea water): 1.52 mg / L (based on the lowest chronic toxicity aquatic algae NOEC ≥ 76 mg / L and safety factor 50).

PNEC (water, intermittent emissions): 0.0017 mg / L (based on the lowest aquatic toxicity Daphnia magna EC50 = 0.17 mg / L and safety factor 100).

PNEC (sediment): 7.56 mg / kg dry weight (based on long-term toxicity study and EC10 NOEC ≥ 756 mg / kg dry weight and safety factor of 100).

PNEC (soil): 0756 mg / kg dry weight (study based on acute toxicity LC50 and NOEC are ≥ 756

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mg / kg dry weight and safety factor of 1000).
 PNEC (wastewater treatment plant): 0.59 mg / L (based on the lowest effect concentration for microorganisms toxicity EC50 (3 h) = 59 mg / L and a safety factor of 100).

8.2.- EXPOSURE CONTROLS

8.2.1. Engineering controls
 No data available.

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 color)	Solid. Granule white / white tablets 200 g.
Odor	Slight chlorine odor
pH	6-7
Melting / freezing point	The substance decomposes at 252 ° C at 1013 hPa (based on the anhydrous basis) (EU Method A.1)
Initial boiling point and boiling range:	The substance decomposes before boiling point (based on anhydrous substance)
Flash Point	
Flammability (solid, gas)	Not applicable (the substance is a solid).

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DCCNA 55

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01/12/2010	00	FS26-EP

Upper / lower limits of flammability or explosion	No data available.
Explosive properties:	Product is not explosive by friction, impact or shock and spent parts of friction and impact A.14 test (based on anhydrous substance).
Oxidizing Properties	No oxidizing properties shown. (EU Method A17).
Vapour pressure	0.006 Pa at 20 ° C (based on anhydrous substance)
Relative Density	Density "tap": 0.974 g/mL Density "pour": 1.083 g/mL
Solubilit in water:	248.2 g/L (based on anhydrous substance) (HPLC Method)
Partition coefficient n-octanol/water (log Pow):	- 0.0056 (Calculated value, based on anhydrous substance).
Viscosity:	Not applicable (solid substance).
Vapor Density:	No data available
Evaporation Rate	No data available
Auto-ignition Temperature:	Not auto-flammable based on the experience of their use (Differential Thermal Analysis and Calorimetry accelerated speed, based on anhydrous substance).
Decomposition Temperature:	252 °C a 1013 hPa (based on anhydrous substance)

9.2.- ADITONAL INFROMATION

Organic peroxide: In view of the available data do not meet the criteria for classification.
 Substances and mixtures which self-heating: In view of the available data does not meet the criteria for classification.
 Pyrophoric solid: In view of the available data does not meet the criteria for classification.
 Corrosive to metals: In view of the available data does not meet the criteria for classification.
 Substances and mixtures which in contact with water emit flammable gases: A view of the available data does not meet the criteria for classification.

Envasados del Pirineo S.L. C/Binueste s/n 22600 Sabiñánigo –Huesca- Spain	Tfno: +34 974 483 019 Email: info@envasadospirineo.com
Página 9 de 27	

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DCCNA 55

(Sodium Salt of Dichloroisocianuric Acid Dihydrated)

Date:	Edition:	Ref:
01/12/2010	00	FS26-EP

10. STABILITY AND REACTIVITY

10.1.- REACTIVITY

See Chapter 10.3

10.2.- CHEMICAL STABILITY

The substance is stable under normal environmental conditions and under conditions of temperature and pressure during storage and handling

10.3.- POSSIBILITY OF HAZARDOUS REACTIONS

Dangerous reactions can occur if uncontrolled mixing with incompatible materials. Chapter 10.5.

10.4.- CONDITIONS TO AVOID

Humid conditions and temperatures above 40 ° 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

En Combinación Con Los Productos apuestas iniciales mencionados, sí descompone y libera gran Cantidad de Calor, cloro, tricloruro de Nitrógeno, Oxidos de cloro, etc Con El Riesgo de explosion consiguiente si El Nivel de tricloruro de Nitrógeno es suficientemente Elevado.

11. TOXICOLOGICAL INFORMATION

11.1.- TOXICOLOGICAL INFORMATION EFFECTS:

11.2 ACUTE EFFECTS (ACUTE TOXICITY, IRRITATION Y CORROSIVITY)

11.2.1. Oral DL50 (lethal dose 50%)	2094 mg / kg body weight (male rat) 1671 mg / kg body weight (female rat) 1823 mg / kg body weight (male and female rat) (EPA OPP 81-1).
11.2.2. Skin DL50 (lethal dose 50%)	> 5000 mg / kg body weight (male and female rat)

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01/12/2010	00	FS26-EP

	(EPA OPP 81-2)
11.2.3. CL50 inhalation (lethal concentration 50%)	> 0.27 - <1.17 mg / L air (4 h, male and female rats, inhalation of dust gravimetric measurement) (Equivalent to OECD Method 403)
11.2.4. Corrosion /Skin irritation	Corrosive to the skin. Category 1A: Causes severe skin burns and eye damage. Corrosive (rabbit) (EPA OPP 81-5)
11.2.5. Serious eye damage / irritation	Eye damage. Category 2: Causes severe eye irritation Corrosive (rabbit) (EPA OPP 81-4)
11.2.6 Specific target organ toxicity - Single exposure	Classification as corrosive substance implies the potential to cause respiratory tract irritation. Therefore it has been assigned this classification

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 the criteria for classification.

Oral:

NOAEL: 115 mg / kg bw / day (male rats, 28-59 days subchronic)

NOAEL: 178 mg / kg bw / day (female rats, 28-59 days subchronic)

LOAEL: 429 mg / kg kg bw / day (male rats, 28-59 days subchronic)

LOAEL: 492 mg / kg bw / day (female rats, 28-59 days subchronic)

Inhalation exposure:

Envasados del Pirineo S.L.

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Date:	Edition:	Ref:
01/12/2010	00	FS26-EP

NOAEL:> 31 mg / m³ air (male and female rats, inhalation of dust, 4 weeks, subchronic)
 LOAEL:> 31 mg / m³ air (male and female rats, inhalation of dust, 4 weeks, subchronic)

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

Carcinogenicity: In view of the available data does not meet the criteria for classification.

Oral: NOAEL: 1523 mg / kg bw / day (male mice, 104 weeks) NOAEL: 1582 mg / kg bw / day (female mice, 104 weeks) (EU Method B.33)

Germ cell mutagenicity: A view of the available data does not meet the criteria for classification.

No evidence of genotoxic potential of the substance in in vitro (with and without metabolic activation similar to OECD method 471 and B.17 and B.19 EU methods) or in vivo studies of chromosomal aberrations in rats (method similar to OECD 475).

Reproductive toxicity: In view of the available data do not meet the criteria for classification.

Oral:

Toxicity study of fertility:

NOAEL (P): 470 mg / kg bw / day (male rat) NOAEL (P): ca. 950 mg / kg bw / day (female rats)

NOAEL (F1): 500 mg / kg bw / day (male rat) NOAEL (F1): ca. 910 mg / kg (female rat)

NOAEL (F2): 190 mg / kg bw / day (male rat) NOAEL (F2): ca. 970 mg / kg (female rat)

(Equivalent to Method EU Method B.35)

Toxicity study of embryonic development

NOAEL (maternal toxicity): 50 mg / kg bw / day (rabbit)

NOAEL (teratogenicity): 500 mg / kg bw / day (rabbit)

(EPA OPP 83-3)

NOAEL (maternal toxicity): 5000 mg / kg bw / day (rat)

NOAEL (teratogenicity): 5000 mg / kg bw / day (rat)

(EU Method B.31)

SAFETY DATA SHEET

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

DCCNA 55

(Sodium Salt of Dichloroisocianuric Acid Dihydrated)

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01/12/2010	00	FS26-EP

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

11.6.- ASPIRATION HAZARD

No data available

12. ECOLOGICAL INFORMATION

12.1.- TOXICITY

Acute Toxicity for fishes

CL50 (lethal concentration 50%):

Species: *Lepomis macrochirus*
 0.23 mg / L (96 h; freshwater static system)

Chronic Toxicity for fishes

NOEC (no observable effect concentration):

Specie: *Oncorhynchus mykiss*.
 1000 mg/L (28 d; semi státic system based on the growth rate (OECD 215)

Acute Toxicity for crustaceans

CE50 (Effects concentration at 50%):

Specie: *Daphnia magna*.
 0.17 mg/L (48 h; sweet water; static system (Method proposed for ASTM)

Chronic Toxicity for crustaceans

NOEC (no observable effect concentration):

Specie: *Daphnia magna*.
 160 mg/L (21 d; sweet water; static system; based on mortality and reproduction) (OECD 211)

Acute Toxicity for algae and other aquatic plants

CE50 (Effects concentration at 50%):

Specie: *Chlorella pyrenoidosa*, *Euglena gracilis* and *Scenedesmus obliquus*.
 < 0.5 mg/L (3 h; sweet water; static system; based on number of de cells)
 (ASTM Method modified E645-85)

Toxicity data and macro-micro soil organisms and other environmentally relevant, such as

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bees, birds, plants

Species: *Eisenia fetida* (anélido).

NOEC (14 d): 1000 mg / kg soil dry weight (short-term toxicity, based on mortality)

LC50 (14 d): > 1000 mg / kg soil dry weight (short-term toxicity, based on mortality)
(OECD 207)

12.2.- PERSISTENCE AND DEGRADABILITY

Easily biodegradable	Biodegradation in water: Under the study conditions, no biodegradation was observed: 2% after 28 days (O ₂ consumption) Study in non-adapted domestic sewage. (OECD 301 D) Biodegradation in soil: 100% after 23 days on agricultural land. (Saldick J, 1974)
Other relevant information	Is hydrolyzed in dilute aqueous solution, hypochlorous acid and cyanuric giving

12.3.- BIOACCUMULATION

Bioconcentration Factor (BCF): experimental data	SDIC has a Log Pow <1, is rapidly hydrolyzed to cyanuric acid and is very soluble in water. In addition, chlorinated isocyanates are highly reactive with many biological compounds such as proteins and enzymes, and therefore bioaccumulation is considered unlikely. FBC: 1932 (calculated using the software EPIWIN v3.2). Cyanuric Acid bioaccumulation is also unlikely, based on their log Pow: -1.31. (FBC: 3,165, calculated)
Partition coefficient n-octanol/water (log Pow):	- 0.0056 (calculated value)

Envasados del Pirineo S.L. C/Binueste s/n 22600 Sabiñánigo -Huesca- Spain	Tfno: +34 974 483 019 Email: info@envasadospirineo.com
--	---

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

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(Sodium Salt of Dichloroisocyanuric Acid Dihydrated)

Date:	Edition:	Ref:
01/12/2010	00	FS26-EP

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)

SDIC has a Log Pow <1, is rapidly hydrolyzed to cyanuric acid and is very soluble in water. In addition, chlorinated isocyanates are highly reactive with many biological compounds such as proteins and enzymes, and therefore bioaccumulation is considered unlikely.

After hydrolysis, the chlorine is in the form of HOCl and the rest in cyanuric acid, so the substance does not meet the criteria for bioaccumulation (B, mB) and Persistence (P, mP).

The substance is classified as corrosive, but identified no systemic effects. Does not meet the criteria to be designated toxic (T)

The substance does not meet the criteria for PBT or vPvB designated.

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 782/1998, of April 30

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SAFETY DATA SHEET

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



DCCNA 55

(Sodium Salt of Dichloroisocianuric Acid Dihydrated)

Date:	Edition:	Ref:
01/12/2010	00	FS26-EP

- 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 3077	
14.1.2 Shipping name of the United Nations	SOLID SUBSTANCE HAZARDOUS FOR THE ENVIRONMENT NEP (Acid sodium salt dihydrate dichloroisocyanuric).	
14.1.3 Class of hazards for transport:	9	
14.1.4 Packaging Group	III	
14.1.5. Hazards for the Environment:	Substance hazardous for the environment	Label: 
14.2.- IMDG (ship)		
14.1.1 UN Number:	UN 3077	
14.1.2 Shipping name of the United Nations	SOLID SUBSTANCE HAZARDOUS FOR THE ENVIRONMENT NEP (Acid sodium salt dihydrate dichloroisocyanuric).	
14.1.3 Class of hazards for transport:	9	
14.1.4 Packaging Group:	III	
14.1.5. Hazards for the Environment:	Substance hazardous for the environment	Label: 
14.3.- ICAO / IATA (air)		
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SAFETY DATA SHEET

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

DCCNA 55

(Sodium Salt of Dichloroisocianuric Acid Dihydrated)

Date:	Edition:	Ref:
01/12/2010	00	FS26-EP

14.3.1 UN Number:	UN 3077	
14.3.2 Shipping name of the United Nations	SOLID SUBSTANCE HAZARDOUS FOR THE ENVIRONMENT NEP (Acid sodium salt dihydrate dichloroisocyanuric).	
14.3.3 Class of hazards for transport:	9	
14.3.4 Packaging Group:	III	
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 L ANNEX 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

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.

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SAFETY DATA SHEET

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

DCCNA 55

(Sodium Salt of Dichloroisocianuric Acid Dihydrated)

Date:	Edition:	Ref:
01/12/2010	00	FS26-EP

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

15.2.- CHEMICAL SAFETY ASSESSMENT

The supplier has carried out a chemical safety assessment of the substance

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).
 - Syndicat des HALOGEN DRIFTS ET
 - Eurochlor
 - IUCLID DATABASE
- Abbreviations used

<Less Than> Greater Than

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

TLV: Threshold Limit Value (Threshold Limit Value) TWA: Time Weighted Average (el tiempo 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

Envasados del Pirineo S.L.

C/Binueste s/n 22600 Sabiñánigo –Huesca- Spain

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Email: info@envasadospirineo.com



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SAFETY DATA SHEET

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

DCCNA 55

(Sodium Salt of Dichloroisocianuric Acid Dihydrated)

Date:	Edition:	Ref:
01/12/2010	00	FS26-EP

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.

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.

ANNEX I: EXPOSURE SCENARIOS

Sección 1. Title of scenario of Exposure	
ES 1: Formulation of Products (SU 10; PC 1,20,21,23,34,35 PROC 1,2,3,4,5,8a,9,14,15; ERC 2)	
Description of activities and processes involved in the exposure scenario	
Manufacturing of the Substance	
Production and processing of the substance in the physical preparation necessary (ie, granules or tablets) can be performed separately or as part of the production process itself. There is no separation of the processes of manufacturing and processing of the substance, either for use as a biocide chemical or	
Invasados del Pirineo S.L. C/Binueste s/n 22600 Sabiñánigo –Huesca- Spain	Tfno: +34 974 483 019 Email: info@envasadospirineo.com
Página 19 de 27	

SAFETY DATA SHEET

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

DCCNA 55

(Sodium Salt of Dichloroisocianuric Acid Dihydrated)

Date:	Edition:	Ref:
01/12/2010	00	FS26-EP

The substance is produced in a continuous process, where air emissions are treated to prevent emissions of the substance or other materials containing chlorine. The raw materials needed for the production of chlorine and caustic soda are cyanuric acid. Cyanuric acid is reacted with chlorine and caustic soda in water to produce a suspension of the active substance required. The mixture is filtered, washed and dried to produce solid active substance.

After drying, the active substance is granulated using compaction techniques and grinding, if necessary. The final form of the active substance is packaged for distribution in bags of 1000 kg or PP 5, 10, 25 or 50 kg pails or drums or PE.

Part of the granulated active substance is reprocessed to form tablets. The lot size is 1000 kg tablets, taking an hour, with approximately 17 lots processed per day. The granular product is sieved and mixed with another component, for example, boric acid acts as a lubricant during tablet production. The mixture is compressed through the tablet machine and the tablets are packaged. The tablets are re-packed in cans or plastic buckets (polypropylene) of 1, 2, 3, 5, 10, 25 or 50 kg.

All gas emissions are filtered to remove dust and treated with sodium hydroxide to remove chlorine and other volatile species of chlorinated compounds. The dry solid waste filtration systems air is collected and recycled in the process. Sodium hypochlorite produced by the reaction of volatile species of chlorine and sodium hydroxide, is sold for use in other chemical industries.

Waste from the manufacturing process of tablets is estimated at less than 0.1%. The powder of residues of this process is sent to an outpatient treatment facility for disposal.

Any aqueous residue from the manufacturing process is filtered to remove solids that are recycled in the process. It is also eliminating all species of chlorine in the water before release to a treatment plant wastewater. Solid waste from this process are sent to external treatment facility for disposal.

No release of the substance to the environment through gaseous or aqueous emissions from this process. The products of the process are the hydrolysis products, chlorine (HOCl) and

Envasados del Pirineo S.L. C/Binueste s/n 22600 Sabiñánigo –Huesca- Spain	Tfno: +34 974 483 019 Email: info@envasadospirineo.com
Página 20 de 27	



ENVASADOS DEL PIRINEO



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SAFETY DATA SHEET

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

DCCNA 55

(Sodium Salt of Dichloroisocianuric Acid Dihydrated)

Date:	Edition:	Ref:
01/12/2010	00	FS26-EP

cyanuric acid. On average, less than 1% of total available chlorine in the system is released to waste. About 150 kg / day of CYA (cyanuric acid) is sent to treatment plants, wastewater (STP) with a total of 30 kg / day of CYA released to surface waters of the PTS.

The cycle of raw materials to finished product manufacturing process continues, will last approximately 5 hours, with 1000 kg processed per hour.

Forced air systems are used during the tablet manufacturing process to ensure a supply of clean air. Workers wear protective equipment (PPE) routinely consists of safety glasses, gloves, monkey, helmet and respiratory protective equipment (RPE) consists of a half-face respirator with chlorine filter (EN140). EPR is not used in conjunction with forced air supply.

During maintenance and cleaning workers will wear gloves, disposable masks, overalls and boots and acid resistant. Breathing apparatus with full face air tanks available if required.

Dry Formulation and repackaging

The dry formulations are usually prepared in a batch operation by adding different components to a mixer, using the mixer to mix the components and then download the mixer to a filling machine that dispenses the mixed formulation in the desired container sale. If you are producing a compressed, mixed product normally flows from the blender directly into the hopper of the press. The press compresses the mixture of products in tablet form, which then flows from the press container. Once filled to the proper weight, the container is moved out of the filling machine or away from the press and then closed or sealed. The small containers are placed in a cardboard box, while large cubes do not require a box. Cardboard boxes or bins are usually placed on a platform for storage and shipping. After a production cycle, the equipment can be cleaned to remove residual product in the preparation of the next production run.

The operation is very similar when pure or SDIC SDIC is being repackaged dihydrate, unless the mixing hopper is replaced by a simple and do not mix other materials. The products are almost always compressed mixtures, especially for non-biocide.

Dosing operations and closing the container can be operated manually or automatically. With lower volume products are more manual and higher-volume products are more automated. Lower volume products are often mixed and packaged in non-specialized equipment (PROC 8)

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SAFETY DATA SHEET

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

DCCNA 55

(Sodium Salt of Dichloroisocianuric Acid Dihydrated)

Date:	Edition:	Ref:
01/12/2010	00	FS26-EP

while higher-volume products can be mixed and packaged in specialized equipment (PROC 9). For example, a formulator could sell several different formulations based cleaning SDIC SDIC or dehydrate, all of which are mixed and packaged in the same production line.

Empty of drums

The worker exposure may occur when adding the pure NaDCC mixer. Most makers use NaDCC drums and the operator must open the drum and control the flow of product in the mixer, although the team may be able to hold and turn the drum. A worker adding products to the mixer would normally use EPI / EPR as gloves, gown, goggles and a half-face respirator with chlorine cartridges in the presence of dust and fumes. In addition, local exhaust ventilation air and air filtration systems are used to minimize the exposure of workers and prevent dust emissions. The opening and emptying a drum usually only require a couple of minutes, after which the mixer is closed so that the formulation can be mixed and packaged. The time between batches depends on the production rate and size of the mixer, but a typical time between mixtures can be 30-60 minutes. Therefore, in order to empty drums / drum:

Workers exposed to pure NaDCC
 No. of workers exposed = 1
 Exposure time = 2 minutes per batch
 Number of exposures for a shift of 8 hours = 8 to 16

RMM = PPE (gloves, gown, goggles) and RPA (half-face respirators) and engineering controls. The mixer and the discharge line would normally be a closed system, ventilation through a filter to control dust emissions, so that there will be exposure during this step.

Packaging

The worker exposure may occur when adding the NaDCC Exposure of workers can occur when closing the filled containers open. During this task, the exhibition is the formulated product, which can contain from 3 to 25% of SDIC SDIC or dihydrate. For example automatic dishwashing formulations containing ca. 6% NaDCC and cleaning products containing 6-25% or SDIC SDIC dihydrate. When there is repackaging the product is 100% SDIC SDIC or dihydrate.

Envasados del Pirineo S.L. C/Binueste s/n 22600 Sabiñánigo –Huesca- Spain	Tfno: +34 974 483 019 Email: info@envasadospirineo.com
Página 22 de 27	



ENVASADOS DEL PIRINEO



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SAFETY DATA SHEET

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

DCCNA 55

(Sodium Salt of Dichloroisocianuric Acid Dihydrated)

Date:	Edition:	Ref:
01/12/2010	00	FS26-EP

The exposure of workers is greatest near the point where the containers are filled and less where you add the lids or seals. If the formulation is being compressed, the greatest exposure is about the press, less where containers are filled and less where you add the lids or seals. For dry formulations (PROC 8) is likely to be a person operating the filling machine or press and another to close the containers. To PROC 9, these tasks can be automated, so it will probably be a person who operates the filling machine or of the press, the closure of the containers and placed in closed containers the cartons. The exhibition will take place provided that the containers are full, that is, except when the mixer is full and is operational. Workers usually wear PPE such as gloves, gown, goggles and a half-face respirator with chlorine cartridges. You must also have local exhaust ventilation air at the point where the containers are full, since the generation of dust or fumes is likely. Therefore, for filling and closing containers (PROC 8 or 9):

Workers exposed to the formulation with 6 to 25% 100% SDIC SDIC or repackaging

No. of exposed workers or 1 = 2

Total exposure time in a shift of 8 hours = 6 to 7 h

RMM = PPE (gloves, monkey, safety glasses) and EPR (half-face respirators) and engineering controls.

Indirect Exposure

You can also have indirect exposure to other workers in the same area, they are moving materials in and outside the production area or working in an adjacent production area. This exhibition will be at lower levels and for shorter periods of time for workers to fill containers, but these other workers may be using as many EPI / EPR. The production facilities must have supervised the work areas for dust and fume levels, and require EPR in areas that exceed occupational exposure limits. Therefore, for workers with indirect exposure:

Workers exposed to a formulation with 6 to 25% 100% SDIC SDIC or repackaging

No. of workers exposed = 1 to 6

Total exposure time per shift = 2 has levels below occupational exposure limits

RMM = PPE (gloves, monkey, safety glasses) and engineering controls. During cleaning and

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Página 23 de 27	



ENVASADOS DEL PIRINEO



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SAFETY DATA SHEET

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

DCCNA 55

(Sodium Salt of Dichloroisocianuric Acid Dihydrated)

Date:	Edition:	Ref:
01/12/2010	00	FS26-EP

maintenance workers use the same PID / EPR described above for production workers.

Section 2. Conditions and Risk Management Measures

Risk Management Measures

Workers should not use respiratory protection standard. Using a half-face respirator with chlorine cartridges (EN140) is necessary for the opening of drums and filling containers. Yoel applies a chlorine of 1.5 mg/m³.

The substance is corrosive so the risk mitigation measures such as use of PPE is gloves, gowns and goggles, while performing the manipulation of the raw material during the opening of drums and filling container, where exposure may be possible, would apply.

It is expected that engineering controls such as ventilation, are in place in areas that produce the opening of the filling of drums and containers

Measures for the Waste

Air

DCCNA and DCCNA dihydrate and have low volatility. During use of the substance may generate dust and chlorine gas. Engineering controls are in place to mitigate this exposure

All gas emissions are filtered for dust and treated with sodium hydroxide to remove chlorine and other volatile chlorinated species. The dry solid waste filtration systems air are collected and / or recycled or disposed according to the formulator.

The residual powder or tablet formulation is sent to an outpatient treatment facility for disposal.

Water

The aqueous waste from the manufacturing process are filtered to remove solids which are recycled to the process. Water also is treated to remove all species of chlorine before release to a treatment plant wastewater. Solid waste from this process are sent to external treatment facility for disposal.

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SAFETY DATA SHEET

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

DCCNA 55

(Sodium Salt of Dichloroisocianuric Acid Dihydrated)

Date:	Edition:	Ref:
01/12/2010	00	FS26-EP

In the UK the environmental quality standards for issuing regulations not to waste water are:

Chloride: 250000 ug / L (AA)
Chloride: 2 ug / L (TAC) (AA)
5 ug / L (TAC) (MAC)

TAC = Total Available Chlorine (Total Available Chlorine)

MAC = Maximum Allowable Concentration (Maximum Allowable Concentration)

AA = Annual Average (Annual Average)

For a single manufacturing facility, about 150 kg / day of CYA plants is sent to wastewater treatment (STP) with a total of 30 kg / day of CYA released to surface waters of the PTS.

Section 3. Exposure Estimation

The production and development are conducted throughout the year.

3.1. Health

LEVEL 1

The exposure estimates were made with the ECETOC TRA tool (July 09). Input values are:

NaDCC Molecular Weight: 220

DNEL NaDCC Inhalation: 8.11 mg/m³

Dermal DNEL NaDCC: 2.30 mg / kg P.C. / d

Transience: low

Protective Equipment: No protective equipment was used.

All codes PROC conducted with and without the use of ventilation.

However, the guide to the information requirements and chemical safety assessment, part D, page 41 says: For dermal exposure the tool should be used assuming no local exhaust ventilation air (LEV) because it was found that the tool underestimates the dermal exposure when it assumes the presence of local exhaust ventilation air. The use of LEV in the tool function assumes the same protective factor for cutaneous exposure would be achieved by

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SAFETY DATA SHEET

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

DCCNA 55

(Sodium Salt of Dichloroisocianuric Acid Dihydrated)

Date:	Edition:	Ref:
01/12/2010	00	FS26-EP

applying the default factor of 90% protection for the use of gloves.

LEVEL 2

Inhalation

Monitoring data from a single manufacturing site for the substance has shown that the actual exposure is 0.1 ppm (0145 mg/m³) of chlorine (Batchelli, SS (2004)). This value is taken as the worst case of exposure by inhalation of an industrial process.

Dermal

The substance is corrosive and risk mitigation measures are applied to prevent exposure. The manipulation of the raw material must be made with the use of chemical resistant gloves (CEFIC CW29.01 collection RMM). For normal use nitrile glove should be adequate protection. A default protection factor of 90% is applicable.

3.2. Environment

Environmental Issues

The substance hydrolyzes cyanuric acid and hypochlorous acid in aqueous solution. The substance is converted to hydrolysis products in wastewater streams or removed from air emissions and recycled into the production system. The Hazard Mitigation measures are carried out with the intent to prevent the release into the environment of volatile chlorine species. As there is no emission of the substance into the environment from the production and formulation does not make the exposure scenario.

Section 4. Guide for the IU to asses if it works into the limits fixed for the scenario of exposure

The UI works within the limits set by the ES, although the risk management measures proposed, as described above, are met or the downstream user can prove for yourself that their operational conditions and risk management measures in place are adequate. This must be done by showing that inhalation and dermal exposure are limited to a level below the respective DNEL (since the processes and activities are covered by the PROC listed above) as follows. If no data available measuring the UI can use a tool appropriate scale as ECETOC TRA

Envasados del Pirineo S.L. C/Binueste s/n 22600 Sabiñánigo –Huesca- Spain	Tfno: +34 974 483 019 Email: info@envasadospirineo.com
Página 26 de 27	



ENVASADOS DEL PIRINEO

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SAFETY DATA SHEET

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

DCCNA 55

(Sodium Salt of Dichloroisocianuric Acid Dihydrated)

Date:	Edition:	Ref:
01/12/2010	00	FS26-EP

or EPIWIN v3.2

The exposure estimates were made using the ECETOC TRA tool for workers.

The calculation of the BCF was carried out with EPIWIN software v3.2.

Important Note: By demonstrating the safe use when comparing exposure estimates with DNEL long term, acute DNEL is also covered (as the guide R.14, acute exposure levels can be obtained by multiplying estimates of long exposure term by a factor of 2).

Section 1. Title of the Scenario of Exposure

ES 2 Use like biocide (SU 3, 5, 21,22; PC 8, 35)

La sustancia es una sustancia activa existente en proceso de evaluación para la inclusión en el Annex I to Directive 98/8/EC on Biocidal Products for use in the following product types and is considered registered for these uses:

PT 2 Disinfectants for private areas of public health and other biocides

PT 3 Products Veterinary hygiene biocidal

PT 4 Disinfectants for food and foraging

PT 5 disinfectants for drinking water

PT 11 Protective liquid cooling systems and processing

Slimicidas PT 12

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Thamesway
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Kent, DA11 9DT
www.pool-chem.co.uk

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Tfno: +34 974 483 019

Email: info@envasadospirineo.com