

SAFETY DATA SHEET

(in accordance with Regulation (EU) 2015/830)

507-BORIC ACID

Version: 15

Revision date: 16/03/2018



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SECTION 1: IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY/UNDERTAKING.

1.1 Product identifier.

Product Name: BORIC ACID
Product Code: 507
Chemical Name: boric acid
Index No: 005-007-00-2
CAS No: 10043-35-3
EC No: 233-139-2
Registration No: 01-2119486683-25-XXXX

1.2 Relevant identified uses of the substance and uses advised against.

Chemical analysis, chemical production, pharmaceutical production and analysis (chemical synthesis)
Plastics, paints and lacquers
Manufacture of matches, pyrotechnics, explosives, oxidant in the chemical industry.

Uses advised against:

Uses other than those recommended.

1.3 Details of the supplier of the safety data sheet.

Company: **NITROPARIS S. L.**
Address: POL. IND. LA MINA
City: 12520 - NULES
Province: (Castellón) ESPAÑA
Telephone: TEL.+34 964 67 39 27
Fax: +34 964 67 49 84
E-mail: info@nitroparis.com
Web: www.nitroparis.com

1.4 Emergency telephone number: +34 964 67 39 27 (Only available during office hours; Monday-Friday; 08:00-18:00)

SECTION 2: HAZARDS IDENTIFICATION.

2.1 Classification of the substance.

In accordance with Regulation (EU) No 1272/2008:

Repr. 1B : May damage fertility. May damage the unborn child.

2.2 Label elements.

Labelling in accordance with Regulation (EU) No 1272/2008:

Pictograms:



Signal Word:

Danger

H statements:

H360FD May damage fertility. May damage the unborn child.

P statements:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P405 Store locked up.
P501 Dispose of contents/container to ...

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EUH statements:

Restricted to professional users.

Contains:

boric acid

2.3 Other hazards.

The product may have the following additional risks:

Dustiness.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS.

3.1 Substances.

Mono-constituent.

Chemical Name: [4] boric acid
Index No: 005-007-00-2
CAS No: 10043-35-3
EC No: 233-139-2
Registration No: 01-2119486683-25-XXXX

[1] Substance with a Community workplace exposure limit (see section 8.1).

[4] Substance included in the list established under Article 59, paragraph 1, REACH (Candidate or subject to authorization).

3.2 Mixtures.

Not Applicable.

SECTION 4: FIRST AID MEASURES.

4.1 Description of first aid measures.

Delayed effects may occur after the exposure to the product.

Inhalation.

If symptoms such as irritation of nose and throat are observed, move to areas of fresh air.

Eye contact.

Flush eyes with an eye socket or simply with clean water. If irritation persists for more than 30 minutes consult a doctor.

Skin contact.

No treatment required.

Ingestion.

Taking small amounts of the product (one teaspoon) is not harmful to healthy adults. If swallowed in larger doses drink two glasses of water and seek medical advice.

4.2 Most important symptoms and effects, both acute and delayed.

Symptoms of accidental overexposure to high doses of inorganic borate salts have been associated with ingestion or absorption across large areas of heavily damaged skin. Such symptoms may include nausea, vomiting and diarrhea, as well as delayed effects consisting of the redness and detachment of the skin.

4.3 Indication of any immediate medical attention and special treatment needed.

Note to physician: If an adult has ingested a few grams of boric acid, it is only necessary to keep it under observation. If large amounts are ingested, maintain the balance of fluids and electrolytes and an adequate renal function. Gastric lavage is only recommended for high exposures in symptomatic patients in whom emesis has not emptied the stomach. Only hemodialysis should be used in case of massive water absorption or in patients with impaired renal function. Boron tests in urine or blood are only intended to indicate the degree of exposure and should not be used to assess the severity of intoxication or to guide the treatment to be followed.

SECTION 5: FIREFIGHTING MEASURES.

The product does not present any particular risk in case of fire.

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5.1 Extinguishing media.

Suitable extinguishing media:

Extinguisher powder or CO₂. In case of more serious fires, also alcohol-resistant foam and water spray.

Unsuitable extinguishing media:

Do not use a direct stream of water to extinguish. In the presence of electrical voltage, you cannot use water or foam as extinguishing media.

5.2 Special hazards arising from the substance.

Special risks.

Any. The product is not flammable, combustible or explosive. The product itself is flame retardant.

5.3 Advice for firefighters.

Use water to cool tanks, cisterns, or containers close to the heat source or fire. Take wind direction into account. Prevent the products used to fight the fire from going into drains, sewers, or waterways.

Fire protection equipment.

According to the size of the fire, it may be necessary to use protective suits against the heat, individual breathing equipment, gloves, protective goggles or facemasks, and boots.

SECTION 6: ACCIDENTAL RELEASE MEASURES.

6.1 Personal precautions, protective equipment and emergency procedures.

For exposure control and individual protection measures, see section 8.

6.2 Environmental precautions.

Prevent the contamination of drains, surface or subterranean waters, and the ground.

The product is a water-soluble white powder likely to cause damage to trees and vegetation due to root absorption. Avoid contaminating water bodies during cleaning and disposal. Inform local water authorities that contaminated water should not be used to irrigate or to obtain potable water until the boron values return to baseline levels as a result of natural dilution.

6.3 Methods and material for containment and cleaning up.

The contaminated area should be immediately cleaned with an appropriate de-contaminator. Pour the decontaminator on the remains in an opened container and let it act various days until no further reaction is produced.

Adequate containment: avoid spills into the water and plug drains.

Spills on the floor: aspirate, sweep or remove with the help of a shovel the product and place it in containers for disposal in accordance with the established local regulations.

Spills in water: if possible, remove containers not affected by water.

6.4 Reference to other sections.

For exposure control and individual protection measures, see section 8.

For later elimination of waste, follow the recommendations under section 13.

SECTION 7: HANDLING AND STORAGE.

7.1 Precautions for safe handling.

For personal protection, see section 8. Never use pressure to empty the containers. They are not pressure-resistant containers.

In the application area, smoking, eating, and drinking must be prohibited.

Follow legislation on occupational health and safety.

Keep the product in containers made of a material identical to the original.

7.2 Conditions for safe storage, including any incompatibilities.

Store according to local legislation. Observe indications on the label. Store the containers between 5 and 35° C, in a dry and well-ventilated place, far from sources of heat and direct solar light. Keep far away from ignition points. Keep away from oxidising agents and from highly acidic or alkaline materials. Do not smoke. Prevent the entry of non-authorised persons. Once the containers are open, they must be carefully closed and placed vertically to prevent spills.

The product is not affected by Directive 2012/18/EU (SEVESO III). General: No special precautions are required when handling the product, but it is recommended to store it in a dry place. In order to keep the package wrapper in good condition and to minimize the caking of the product, the oldest packages must be removed from the warehouse first. The storage location should also be kept clean and in good repair to minimize the release and accumulation of dust.

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Storage temperature: The ambient temperature
Storage pressure: Atmospheric
Special Susceptibility: To moisture (caking problem)

7.3 Specific end use(s).

Not available.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION.

8.1 Control parameters.

The product does NOT contain substances with Professional Exposure Environmental Limit Values. The product does NOT contain substances with Biological Limit Values.

Concentration levels DNEL/DMEL:

Name	DNEL/DMEL	Type	Value
boric acid CAS No: 10043-35-3 EC No: 233-139-2	DNEL (Workers)	Inhalation, Long-term, Systemic effects	8,3 (mg/m ³)
	DNEL (General population)	Inhalation, Long-term, Systemic effects	4,15 (mg/m ³)
	DNEL (Workers)	Dermal, Acute, Systemic effects	392,0 (mg/kg/día)
	DNEL (General population)	Dermal, Acute, Systemic effects	196,0 (mg/kg/día)
	DNEL (General population)	Oral, Acute, Systemic effects	0,98 (mg/kg/día)

DNEL: Derived No Effect Level, level of exposure to the substance below which adverse effects are not anticipated.

DMEL: Derived Minimal Effect Level, exposure level corresponding to a low risk, that risk should be considered a tolerable minimum.

Concentration levels PNEC:

Name	Details	Value
boric acid CAS No: 10043-35-3 EC No: 233-139-2	Agua, dulce y salada	2,02 (mg B/L)
	Agua, intermitente	13,7 (mg B/L)
	Aire	(No se espera exposición)
	Soil	5,4 (mg B/kg suelo seco)
	Sedimento	(No aplicable debido a la ausencia de reparto en el sedimento)
	STP	10 (mg B/L)

PNEC: Predicted No Effect Concentration, concentration of the substance below which adverse effects are not expected in the environmental compartment.

8.2 Exposure controls.

Measures of a technical nature:

Provide adequate ventilation, which can be achieved by using good local exhaust-ventilation and a good general exhaust system.

Concentration:	100 %
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Uses:	Chemical analysis, chemical production, pharmaceutical production and analysis (chemical synthesis)			
	Plastics, paints and lacquers			
	Manufacture of matches, pyrotechnics, explosives, oxidant in the chemical industry.			
Breathing protection:				
PPE:	Particle filter mask			
Characteristics:	«CE» marking, category III. Made of filtering material, it covers nose, mouth and chin.			
CEN standards:	EN 149			
Maintenance:	Check for any tears, defects, etc. before use. Since it is disposable individual protection equipment, it should be replaced after use.			
Observations:	Does not protect worker unless properly adjusted. Follow the manufacturer's instructions regarding suitable use of the equipment.			
Filter Type needed:	P2			
Hand protection:				
PPE:	Protective gloves.			
Characteristics:	«CE» marking, category II.			
CEN standards:	EN 374-1, En 374-2, EN 374-3, EN 420			
Maintenance:	Keep in a dry place, away from any sources of heat, and avoid exposure to sunlight as much as possible. Do not make any changes to the gloves that may alter their resistance, or apply paints, solvents or adhesives.			
Observations:	Gloves should be of the appropriate size and fit the user's hand well, not being too loose or too tight. Always use with clean, dry hands.			
Material:	PVC (polyvinyl chloride)	Breakthrough time (min.):	> 480	
Eye protection:				
PPE:	Protective goggles with built-in frame.			
Characteristics:	«CE» marking, category II. Eye protector with built-in frame for protection against splashing liquid, dust, smoke, fog and vapour.			
CEN standards:	EN 165, EN 166, EN 167, EN 168			
Maintenance:	Visibility through lenses should be ideal. Therefore, these parts should be cleaned daily. Protectors should be disinfected periodically following the manufacturer's instructions.			
Observations:	Some signs of wear and tear include: yellow colouring of the lenses, superficial scratching of the lenses, scraping etc.			
Skin protection:				
PPE:	Protective clothing.			
Characteristics:	«CE» marking, category II. Protective clothing should not be too tight or loose in order not to obstruct the user's movements.			
CEN standards:	EN 340			
Maintenance:	In order to guarantee uniform protection, follow the washing and maintenance instructions provided by the manufacturer.			
Observations:	The protective clothing should offer a level of comfort in line with the level of protection provided in terms of the hazard against which it protects, bearing in mind environmental conditions, the user's level of activity and the expected time of use.			
PPE:	Work footwear.			
Characteristics:	«CE» marking, category II.			
CEN standards:	EN ISO 13287, EN 20347			
Maintenance:	This product adapts to the first user's foot shape. That is why, as well as for hygienic reasons, it should not be used by other people.			
Observations:	Work footwear for professional use includes protection elements aimed at protecting users against any injury resulting from an accident			

Environmental exposure controls:

Limitation of emissions from the site: where appropriate, the material must be recovered and recycled during the process. If borates are discharged in the form of powder or granules it is necessary to sweep or aspirate the product immediately and place it in containers for disposal, thus avoiding unintended release into the environment. Residues containing borates must be handled as hazardous waste and their disposal must be entrusted to an authorized operator, who will move it out of the facility to incinerate or dispose of it in a landfill for hazardous waste.

Emissions to water: the storage site must be protected from rainfall. Do not empty into drains or sewers. It is only possible to remove waste from the water using very specific treatment techniques, such as ion exchange resins, reverse osmosis, etc. The effectiveness of eliminations depends on a number of factors and will range from 40% to 90%. At present, most such techniques do not allow the treatment of large volumes of waste or different waste streams. Boron is not removed in considerable amounts

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in conventional sewage treatment plants. The discharge sites of a municipal STP of boron concentration should not exceed the PNEC of the municipal STP.

Emissions to the atmosphere: one or more of the following dust control measures can be used to eliminate air emissions: electrostatic precipitators, cyclones, cloth or bag filters, membrane filters, ceramic and wire mesh filters and Wet washers.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES.

9.1 Information on basic physical and chemical properties.

Appearance: N.A./N.A.

Colour: white

Odour: odorless

Odour threshold: n.a

pH: 6.1 (0,1%)

Melting point: >1000 °C

Boiling Point: >300 °C

Flash point: N.A./N.A.

Evaporation rate: n.a

Inflammability (solid, gas): Non-flammable (flame retardant)

Lower Explosive Limit: Non-flammable

Upper Explosive Limit: Non-flammable

Vapour pressure: n.a

Vapour density: n.a

Relative density: 1.49

Solubility: n.a

Liposolubility: n.a

Hydrosolubility: 49.2 g/L

Partition coefficient (n-octanol/water): -1.09

Auto-ignition temperature: If it is heated to temperatures above 100 °C, water is lost and boric acid is initially converted to metaboric acid (HBO₂) and if it is still heated, boric oxide (B₂O₃)°C

Decomposition temperature: If it is heated to temperatures above 100 °C, water is lost and boric acid is initially converted to metaboric acid (HBO₂) and if it is still heated, boric oxide (B₂O₃)°C

Viscosity: n.a

Explosive properties: Not explosive

Oxidizing properties: Non-oxidizing

N.A./N.A.= Not Available/Not Applicable due to the nature of the product

9.2 Other information.

Pour point: n.a

Blink: n.a

Kinematic viscosity: n.a

N.A./N.A.= Not Available/Not Applicable due to the nature of the product

SECTION 10: STABILITY AND REACTIVITY.

10.1 Reactivity.

None known

10.2 Chemical stability.

It is a stable product at normal ambient temperature (-40 °C to + 40 °C) but when heated it loses water and ends up being transformed into anhydrous borax (Na₂B₄O₇)

10.3 Possibility of hazardous reactions.

Boric acid is a weak acid that can cause corrosion of basic metals.

Reacting with strong reducing agents such as metal hydrides or alkali metals will generate hydrogen gas which could cause explosion hazard.

10.4 Conditions to avoid.

Avoid contact with strong reducing agents stored in accordance with good industrial practice

10.5 Incompatible materials.

Strong reducing agents.

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10.6 Hazardous decomposition products.

none

SECTION 11: TOXICOLOGICAL INFORMATION.

11.1 Information on toxicological effects.

Repeated or prolonged contact with the product can cause the elimination of oil from the skin, giving rise to non-allergic contact dermatitis and absorption of the product through the skin.

Splatters in the eyes can cause irritation and reversible damage.

Toxicological information.

Name	Acute toxicity			
	Type	Test	Kind	Value
boric acid	Oral	LD50	rata macho	3.450 mg/kg [1]
		[1] OECD Directriz 401-	Dosis 2,00-5,00 mg/kg de peso corporal	
	Dermal	LD50	rabbit	>2.000 mg/kg [1]
		[1] Directrices U.S EPA FIFRA.	Dosis 2,00 mg/kg bw	
CAS No: 10043-35-3 EC No: 233-139-2	Inhalation	LC50	Rat	>2.0 mg/L [1]
		[1] OECD Directriz 403		

a) acute toxicity;

Not conclusive data for classification.

b) skin corrosion/irritation;

Not conclusive data for classification.

Method: Dermal Primary Irritation Study-EPA FIFRA (40 CFR 163)

Species: White New Zealand rabbit

Dosage: 0.5g moistened with saline water

Route of exposure: Dermal

Results: No skin irritation

Mean of the primary irritation score: 0.1. Based on the available data, the classification criteria are not met.

c) serious eye damage/irritation;

Not conclusive data for classification.

Method: Eye irritation study - similar to OECD Guideline 405

Species: White New Zealand rabbit

Dosage: 0.1g

Route of Exposure: Eyes

Results: Non-irritant, corneal damage or clear irritation in 7 days

Classification: Based on the mean score <1, and the effects were completely reversible in 7 days, the classification criteria were not met.

There are no adverse effects on the human eye after many years of professional exposure.

d) respiratory or skin sensitisation;

Not conclusive data for classification.

Method: Test Buehler-OECD Guideline 406

Species: Pig Guinea

Dose: 0.4g 95% w / w / boric acid

Route of exposure: dermal

Results: It is not a skin sensitizer. No respiratory sensitization studies have been performed. There is no data to suggest that boric acid is a respiratory sensitizer. Based on the available data, the classification criteria are not met.

e) germ cell mutagenicity;

Not conclusive data for classification.

Methods: Several in vitro mutagenicity studies have been carried out on boric acid including genetic mutation in mammalian cells, unscheduled DNA synthesis, chromosomal aberrations and sister chromatid exchange in mammalian cells.

Species: L5178Y mouse lymphoma, V79 Chinese hamster cells, C3H / 10T1 / 2 cells, hepatocytes, Chinese hamster ovary (CHO).

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Dose: 1.0-10.0 mg / mL (1000-10000 ppm) boric acid

Route of exposure: in vitro

Results: Non-mutagenic (based on boric acid). Based on the available data, the classification criteria are not met.

f) carcinogenicity;

Not conclusive data for classification.

Method: Equivalent to OECD method 451

Species: B6C3F1 mice

Dosage: 446; 1150 mg boric acid / kg bw / day

Route of exposure: oral feeding study

Results: There is no evidence of carcinogenicity. Based on the available data, the classification criteria are not met.

g) reproductive toxicity;

Product classified:

Reproductive toxicant, Category 1B: May damage fertility or the unborn child.

Method: Three Generation Feeding Study - Similar to OECD 416 Two Generation Study

Species: rat

Dosage: 0; 34 (5.9); 100 (17.5); And 336 (58.5) mg boric acid (mg B) / kg bw / day

Route of exposure: oral feeding study

Results: NOAEL in rats for effects on fertility in males is 100 mg of boric acid / kg bw equivalent to 17.5 mg B / kg bw.

Method: Toxicity Study of Prenatal Development of Boric Acid-OECD Guideline 414

Species: rat

Dosage: 0; 19 (3.3); 36 (6.3); 55 (9.6); 76 (13.3) and 143 (25) mg of boric acid (mg B) / kg bw / day

Route of exposure: oral feeding study

Results: NOAEL in rats for effects on fetal development including fetal weight loss and minor variations in skeleton is 55 mg boric acid / kg bw or 9.6 mg B / kg.

Classification: Reproductive Toxicity Category 1B (Hazard statement: H360FD: May damage fertility or unborn child)

Method: Occupational studies to evaluate parameters of sperm sensitivity in workers exposed to borate. Epidemiological studies have been conducted evaluating the high environmental exposure to boron and the developmental effects in humans.

Species: human Dose: A subset of workers was exposed to 125 mg B / day

Route of exposure: Combined oral ingestion and inhalation.

Results: It has no adverse fertility in male workers. Epidemiological studies of human developmental effects have shown an absence of effects on workers exposed to borate and inhabitants of areas with high environmental levels of boron.

Summary of CMR Property Assessment:

Boric acid is not mutagenic and has been tested in bioassays for 2 years giving negative for carcinogenicity. Classification for this parameter is therefore not required for disodium tetraborate under EC Directive 67/548 / EEC or under CLP Regulation (EC) No. 1272/2008. A multigenerational study in the rat gave a NOAEL for fertility in males of 17.5 mg B / kg / day. Developmental effects have been observed in laboratory animals, the most sensitive species most sensitive is the rat with a NOAEL of 9.6 mg B / kg Bw / day. Disodium tetraborate is classified under the first ATP (Adaptations to Technical Progress) to CLP as Reproduction 1B; H360FD. While boron has been shown to negatively affect male reproduction in laboratory animals, there is no clear evidence of effects attributable to boron to male reproduction in studies of highly exposed workers.

h) STOT-single exposure;

Not conclusive data for classification.

Method: Standard test method for the estimation of sensory irritation of chemicals in air- ASTM E981-04 (2004)

Species: mouse

Dosage: 221-1096 mg / m3

Route of exposure: Inhalation

Results: The highest concentration of boric acid attainable with an acceptable aerosol concentration was 1096 mg / 3m with a% RD of 19%. The lowest tested exposure of 221 mg / m3 of boric acid resulted in a 9% respiratory rate reduction, classified as non-irritating. Based on the available data, the classification criteria are not met.

Method: Sensory irritation in human volunteers

Species: human

Dose: 2.5, 5, 10 mg boric acid / m3

Route of exposure: Inhalation

Results: No boric acid irritation was observed at exposures greater than 10 mg / m3 between male and female volunteers under laboratory controlled conditions.

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i) STOT-repeated exposure;
Not conclusive data for classification.

Method: Chronic boric acid toxicity study, similar to OECD 452

Species: rat

Dosage: 0; 33 (5.9); 100 (17.5); 334 (58.5) mg boric acid (B) / kg bw per day (nominal in diet)

Route of exposure: Oral feeding study.

Results: A NOAEL of 17.5 mg B / kg bw / day equivalent to 100 mg of boric acid / kg bw / day was determined in a feeding study only at high dose levels. Based on the available data, the classification criteria are not met.

j) aspiration hazard;
Not conclusive data for classification.

The physical form of the solid powder does not indicate a potential aspiration hazard.

Toxicokinetics

Boric acid in the blood is present in major species and is not metabolized. Boric acid is distributed rapidly and evenly throughout the body, with bone concentrations 2-3 times greater than in other tissues. Boric acid is eliminated rapidly, eliminating the half-life of 1 hour in the mouse, 3 hours in the rat and <27.8h in humans, and has a low accumulation potential. Boric acid is eliminated primarily by urine. The absorption of borates by oral route is almost 100%. For the inhalation route 100% is also assumed in the worst cases. Skin absorption through intact skin is very low with an absorbed dose rate of <0.5%.

Information on most likely routes of exposure:

Inhalation is the most significant route of exposure in workplaces and other environments. Dermal exposure is not worrisome because the product is poorly absorbed through intact skin. The product is not suitable for ingestion. Symptoms related to physical, chemical and toxicological characteristics. The products are not intended to be ingested. Small amounts (eg a teaspoon) that are accidentally ingested are unlikely to cause any effects. Symptoms of accidental overexposure to high doses of inorganic borate salts have been associated with ingestion or absorption through large areas of severely damaged skin. They may include nausea, vomiting and diarrhea with delayed effects of redness and scaling.

Delayed and immediate effects as chronic effects in short and long term exposure:

Human epidemiological studies do not show lung disease in working populations with chronic exposures to boric acid and sodium borate powder. Human epidemiological studies do not indicate effects on the fertility of labor populations with chronic exposure to borate dust and do not indicate an effect in the general population with high performance of borates in the environment.

SECTION 12: ECOLOGICAL INFORMATION.

12.1 Toxicity.

Name	Ecotoxicity			
	Type	Test	Kind	Value
boric acid CAS No: 10043-35-3 EC No: 233-139-2	Fish	NOEC/EC 10	micropterus salmoides-carassius auratus	2.9-17 mg B/L [1]
		[1] Seis especies probadas		
	Aquatic invertebrates	NOEC/EC 10	Daphnia magna	5.7-32 mg B/L [1]
		[1] Siete especies probadas		
	Aquatic plants	NOEC/EC 10	Chlorella pyrenoidosa-Anacystis nidulans	10-50 mg B/L [1]
		[1] cuatro especies probadas.		

12.2 Persistence and degradability.

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There is no information available on the degradability of the substances present.

No information is available regarding the degradability. No information is available about persistence and degradability of the product.

12.3 Bioaccumulative potential.

Information about the bioaccumulation.

Name	Bioaccumulation			
	Log Pow	BCF	NOECs	Level
boric acid N. CAS: 10043-35-3 EC No: 233-139-2	-0,757	-	-	Very low

12.4 Mobility in soil.

No information is available about the mobility in soil.

The product must not be allowed to go into sewers or waterways.

Prevent penetration into the ground.

12.5 Results of PBT and vPvB assessment.

No information is available about the results of PBT and vPvB assessment of the product.

12.6 Other adverse effects.

No information is available about other adverse effects for the environment.

SECTION 13 DISPOSAL CONSIDERATIONS.

13.1 Waste treatment methods.

Do not dump into sewers or waterways. Waste and empty containers must be handled and eliminated according to current, local/national legislation.

Follow the provisions of Directive 2008/98/EC regarding waste management.

SECTION 14: TRANSPORT INFORMATION.

Transportation is not dangerous. In case of road accident causing the product's spillage, proceed in accordance with point 6.

14.1 UN number.

Transportation is not dangerous.

14.2 UN proper shipping name.

Description:

ADR: Transportation is not dangerous.

IMDG: Transportation is not dangerous.

ICAO/IATA: Transportation is not dangerous.

14.3 Transport hazard class(es).

Transportation is not dangerous.

14.4 Packing group.

Transportation is not dangerous.

14.5 Environmental hazards.

Transportation is not dangerous.

14.6 Special precautions for user.

Transportation is not dangerous.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code.

Transportation is not dangerous.

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SECTION 15: REGULATORY INFORMATION.

15.1 Safety, health and environmental regulations/legislation specific for the substance.

The product is not affected by the Regulation (EC) No 1005/2009 of the European Parliament and of the Council of 16 September 2009 on substances that deplete the ozone layer.

The product is not affected by Directive 2012/18/EU (SEVESO III).

The product is not affected by Regulation (EU) No 528/2012 concerning the making available on the market and use of biocidal products.

The product is not affected by the procedure established Regulation (EU) No 649/2012, concerning the export and import of dangerous chemicals.

Restrictions on the manufacturing, placing on the market and use of certain dangerous substances, mixtures and articles:

Designation of the substance, of the group of substances or of the mixture	Conditions of restriction
30. Substances which appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 classified as toxic to reproduction category 1A or 1B (Table 3.1) or toxic to reproduction category 1 or 2 (Table 3.2) and listed as follows: - Reproductive toxicant category 1A adverse effects on sexual function and fertility or on development (Table 3.1) or reproductive toxicant category 1 with R60 (May impair fertility) or R61 (May cause harm to the unborn child) (Table 3.2) listed in Appendix 5 - Reproductive toxicant category 1B adverse effects on sexual function and fertility or on development (Table 3.1) or reproductive toxicant category 2 with R60 (May impair fertility) or R61 (May cause harm to the unborn child) (Table 3.2) listed in Appendix 6	1. Shall not be placed on the market, or used, - as substances, - as constituents of other substances, or, - in mixtures, for supply to the general public when the individual concentration in the substance or mixture is equal to or greater than: - either the relevant specific concentration limit specified in Part 3 of Annex VI to Regulation (EC) No 1272/2008, or, - the relevant concentration specified in Directive 1999/45/EC where no specific concentration limit is set out in Part 3 of Annex VI to Regulation (EC) No 1272/2008. Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of substances and mixtures, suppliers shall ensure before the placing on the market that the packaging of such substances and mixtures is marked visibly, legibly and indelibly as follows: 'Restricted to professional users'. 2. By way of derogation, paragraph 1 shall not apply to: (a) medicinal or veterinary products as defined by Directive 2001/82/EC and Directive 2001/83/EC; (b) cosmetic products as defined by Directive 76/768/EEC; (c) the following fuels and oil products: - motor fuels which are covered by Directive 98/70/EC, - mineral oil products intended for use as fuel in mobile or fixed combustion plants, - fuels sold in closed systems (e.g. liquid gas bottles); (d) artists' paints covered by Directive 1999/45/EC; (e) the substances listed in Appendix 11, column 1, for the applications or uses listed in Appendix 11, column 2. Where a date is specified in column 2 of Appendix 11, the derogation shall apply until the said date.

15.2 Chemical safety assessment.

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

Available Product Exposure Scenario.

SECTION 16: OTHER INFORMATION.

Classification codes:

Repr. 1B : Reproductive toxicant, Category 1B

Sections changed compared with the previous version:

16,Exposure scenario(s)

-Continued on next page.-

SAFETY DATA SHEET

(in accordance with Regulation (EU) 2015/830)

507-BORIC ACID

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It is advisable to carry out basic training with regard to health and safety at work in order to handle this product correctly.

Available Product Exposure Scenario.

Abbreviations and acronyms used:

BCF: Bioconcentration factor.

CEN: European Committee for Standardization.

DMEL: Derived Minimal Effect Level, exposure level corresponding to a low risk, that risk should be considered a tolerable minimum.

DNEL: Derived No Effect Level, level of exposure to the substance below which adverse effects are not anticipated.

EC50: Half maximal effective concentration.

PPE: Personal protection equipment.

LC50: Lethal concentration, 50%.

LD50: Lethal dose, 50%.

Log Pow: Logarithm of the partition octanol-water.

NOEC: No observed effect concentration.

PNEC: Predicted No Effect Concentration, concentration of the substance below which adverse effects are not expected in the environmental compartment.

Key literature references and sources for data:

<http://eur-lex.europa.eu/homepage.html>

<http://echa.europa.eu/>

Regulation (EU) 2015/830.

Regulation (EC) No 1907/2006.

Regulation (EU) No 1272/2008.

The information given in this Safety Data Sheet has been drafted in accordance with COMMISSION REGULATION (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.

The information in this Safety Data Sheet on the Preparation is based on current knowledge and on current EC and national laws, as far as the working conditions of the users is beyond our knowledge and control. The product must not be used for purposes other than those that are specified without first having written instructions on how to handle. It is always the responsibility of the user to take the appropriate measures in order to comply with the requirements established by current legislation. The information contained in this Safety Sheet only states a description of the safety requirements for the preparation, and it must not be considered as a guarantee of its properties.

BORIC ACID EXPOSURE SCENARIOS



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Annex to the extended safety data sheet (eSDS)

Usage Number Id.	Sector	Identified use	Phase of the life cycle					Sector category of Use (SU)	Category of chemical products (PC)	Category of process (PROC)	Category of Articles (AC)	Release category in the environment (ERC)	Exhibition scenario	
			Manufacturing	Formulation	End use	Consumer use	Lifetime (for items)						Environment	Health human
1	Production and import	Production and import	X					3,8,9	1,7,8,9a,9b, 12,14,15, 17,18,19, 20,21,23, 24,25,26, 29,30,32, 37,38,39	1,2,3,4, 8a, 8b,9,14,15	-	1, 6a	E1- Processes of import manufacture, refining and packaging of borates EE3-Refining and borate treatment. EE14-Tank truck loading processes. EE15-Ship borate discharge processes EE19-Processes of packaging in bags (25-50kg) EE20-Processes of packaging in bags (big bag 750-1500kg) EE21-General maintenance activities EE32-Laboratory works EE41-Works in warehouses	
2	Abrasive substances	Formulation of borates in abrasive substances		X				3	UCN	3,4,5,8b,9	4	3	E8-Production in closed or semi-closed systems at high temperatures. EE7-Processes of unloading bags (25-50kg) in mixing tanks EE8-Processes of unloading bags "big bag (750-1500kg) in mixing tanks. EE18-Transfer of substances or preparations from or to large vessels or containers in specialized facilities. EE21-General maintenance activities EE22-Transfer of substances to small containers EE31-Compaction and tableting of boron compound powders EE32-Laboratory works.	
3	Abrasive substances	Industrial use of abrasive substances			X			3,15,17	UCN S351000	24	4	4	E9-Generic industrial use of borates as additives in processes and product.	EE39-Industrial and professional use of abrasive substances
4	Abrasive substances	Professional use of abrasive substances			X		X	22	UCN 351000	24	4	10b, 11b	E28- Broad generic dispersive use of articles containing borates with high emissions.	EE39-Industrial and professional use of abrasive substances
5	Abrasive substances	Use of abrasive substances				X	X	21	UCN 351000	--	4	10b, 11b	E28- Broad generic dispersive use of articles containing borates with high emissions.	EECS-Consumer exposure derived from the use of abrasive wheels
6	Adhesives	Formulation of borates in adhesives		X				6a,6b,9,11	1	3,4,5, 8a,8b,9,14	-	2	E7- Formulation of borates in adhesives EE7-Bag unloading processes (25-50kg). EE8-Processes of unloading bags "big bag (750-1500kg) in mixing tanks. EE16-Production in closed environments at room temperature. EE18-Transfer of substances or preparations from or to large vessels or containers in specialized facilities. EE21-General maintenance activities EE22-Transfer of substances to small containers EE31-Compaction and tableting of boron compound powders EE32-Laboratory works.	
7	Adhesives	Industrial use of adhesives			X		X	3,6a,6b,16, 17,18,19	1	2,4,5,7,8b, 9,10,13,14	--	5	E12- Industrial use of adhesives containing borate compounds EE6-Industrial application of adhesive EE18-Transfer of substances or preparations from or to large vessels or containers in specialized facilities.	

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8	Adhesives	Consumer use of articles that contain adhesives				X	X	21	--	--	8	10a, 11a	E27-Broad generic disperse use of articles containing borates with low emission	EEC2-Introduction of cardboard in the mouth of the consumer and oral contact with adhesives containing boron.
9	Agriculture	Formulation of borates in fertilizers		X				1,3	12	2,3,4,5, 8b,9,14	--	2	E4-Generics processes of borate formulation in preparations	EE7-Bag unloading processes (25-50kg) in mixing tanks. EE8-Processes of unloading bags "big bag (750-1500kg)" in mixing tanks. EE16-Production in closed environments at room temperature. EE18-Transfer of substances or preparations from or to large vessels or containers in specialized facilities. EE21-General maintenance activities EE22-Transfer of substances to small containers EE31-Compaction and tableting of boron compound powders EE32-Laboratory works.
10	Agriculture	Professional use			X			1, 22	12	2,3,4,5, 8a,8b,9,11,13	--	8a, 8c, 8d, 8f	E24-Wide disperse use of fertilizers containing borates	EE5-Fertilization processes with liquid boron fertilizers. EE10-Boron fertilizer transfer processes composed of boron. EE23-Process of transfer of foliar liquid fertilizer composed of boron. EE27-Process of dissemination of grain fertilizer composed of boron. EE28-Process of application of foliar liquid fertilizer composed of boron.
11	Agriculture	Use of fertilizer consumption				X		21	19	--	--	8a, 8c, 8d, 8f	E24-Wide disperse use of fertilizers containing borates.	EE23-Use of boron fertilizer consumption.
12	Analytical reagent	Formulation in analytical reagents		X				3	21	2,3,4,5, 8b, 9,15,19	--	2	E4-Generics processes of borate formulation in preparations.	EE7-Processes of unloading bags (25-50kg) in mixing tanks. EE8-Processes of unloading bags "big bag (750-1500kg)" in mixing tanks. EE16-Production in closed environments at room temperature. EE21-General maintenance activities EE22-Transfer of substances to small containers EE32-Laboratory works.
13	Analytical reagent	Use of analytical reagents in laboratories			X			3,22	21	15	--	8a, b, d, e	E22-Generics environmental scenario for the use of borates in laboratories as analytical reagents	EE32-Laboratory works
14	Self-classification	Process additive						3, 6b	20	8b,9	--	4	E10-Industrial use of borates in self-classification processes	EE7-Processes of unloading bags (25-50kg) in mixing tanks. EE8-Processes of unloading bags "big bag (750-1500kg)" in mixing tanks. EE18-Transfer of substances or preparations to or large vessels or containers in specialized facilities.
15	Catalysts	Catalyst manufacturing	X	X				3, 8, 9	UCN P15500	3,4,5,8b	--	1,3,6a,6b	E3-Industrial use of borates in the production of catalysts containing diborane trioxide.	EE7-Bag unloading processes (25-50kg) in mixing tanks. EE8-Processes of unloading bags "big bag (750-1500kg)" in mixing tanks. EE16-Production in closed environments at room temperature. EE18-Transfer of substances or preparations from or to large vessels or containers in specialized facilities. EE21-General maintenance activities EE22-Transfer of substances to small containers EE31-Compaction and tableting of boron compound powders EE32-Laboratory works.
16	Catalysts	Production of polymers		X				3,8	32	2	--	1, 6a, 6b	E2-Generics industrial use of borates that results in the manufacture of other substances.	EE7-Bag unloading processes (25-50kg) in mixing tanks. EE8-Processes of unloading bags "big bag (750-1500kg)" in mixing tanks. EE18-Transfer of substances or preparations from or to large vessels or containers in specialized facilities.
17	Cellulose insulation	Formulation of cellulose insulation		X				5, 6a, 6b, 19	UCN I15600	1,2,3,4, 8b	4	3	E8-Processes genericos de formulación de boratos en materiales	EE7-Bag unloading processes (25-50kg) in mixing tanks. EE8-Processes of unloading bags "big bag (750-1500kg)" in mixing tanks. EE16-Production in closed environments at room temperature. EE18-Transfer of substances or preparations from or to large vessels or containers in specialized facilities. EE21-General maintenance activities EE32-Laboratory works.

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18	Cellulose insulation	Professional use of cellulose insulation			X				19,22	115600	21	4	8c, 8f	E26-Wide dispersive use of cellulose insulation	EE36-Professional installation of cellulose insulation
19	Cellulose insulation	Useful life of cellulose insulation						X	--	--		4	10a, 11a	E27-Broad generic dispersive use of articles containing borates with low emission.	--
20	Ceramics	Production of frits	X	X					3,13, NACE 23.1	19	1,2,3,8b,22	4	2,5,6a	E17-Industrial use of borates in the preparation of frits.	EE2-Production in closed or semi-closed systems at high temperatures. EE16-Production in closed environments at room temperature. EE18-Transfer of substances or preparations from or to large vessels or containers in specialized facilities. EE21-General maintenance activities EE32-Laboratory works.
21	Chemical processes of synthesis	Manufacture of new chemical substances using boron.	X						3,8,9	19	2,3,4, 5,8b,9,13,15, 19,21	--	1, 6a	E2-Generic industrial use of borates that results in the manufacture of another substance.	EE7-Bag unloading processes (25-50kg) in mixing tanks. EE8-Processes of unloading bags "big bag (750-1500kg)" in mixing tanks. EE16-Production in closed environments at room temperature. EE18-Transfer of substances or preparations from or to large vessels or containers in specialized facilities. EE21-General maintenance activities EE22-Transfer of substances to small containers EE31-Compaction and tableting of boron compound powders EE32-Laboratory works.
22	Revetment	Formulation of paints and revetment		X					3,7,8,10	9a,18	1,2,3,4,8a,8b, 9,15	--	2	E6-Borate formulation in paints and coatings	EE7-Bag unloading processes (25-50kg) in mixing tanks. EE8-Processes of unloading bags "big bag (750-1500kg)" in mixing tanks. EE16-Production in closed environments at room temperature. EE18-Transfer of substances or preparations from or to large vessels or containers in specialized facilities. EE21-General maintenance activities EE22-Transfer of substances to small containers EE31-Compaction and tableting of boron compound powders EE32-Laboratory works.
23	Revetment	Industrial use of paints and coatings			X				3,7	9a,18	7,8b,9,10,13	--	5	E13-Industrial use of paints and coatings containing borate compounds.	EE11-Industrial use of paints and coatings
24	Revetment	Professional use of paints and coatings			X				22	9a,18	5,8a,8b,9,10, 9,11,13,19	--	8c, 8f	E25-Wide dispersive use of paints and coatings containing borates.	EE25-Professional use of paints and coatings
26	Construction materials	Formulation / use of borates in construction materials (gypsum boards, wood)		X					3,13	K35000,8	4,5,8b,14,24, 26	4,11	2,3,5	E4-Generic processes of borate formulation in preparations. E8-Generic processes of borate formulation in materials. E11-Generic industrial use of borates that results in inclusion in a matrix.	EE7-Bag unloading processes (25-50kg) in mixing tanks. EE8-Processes of unloading bags "big bag (750-1500kg)" in mixing tanks. EE16-Production in closed environments at room temperature. EE18-Transfer of substances or preparations from or to large vessels or containers in specialized facilities. EE21-General maintenance activities EE22-Transfer of substances to small containers EE31-Compaction and tableting of boron compound powders EE32-Laboratory works.
27	Construction materials	Professional use of construction materials			X			X	22,19	K35000,8	21	4	10a,11a,12a	E21-Generic industrial transformation of articles with abrasive techniques with low emission. E27-Broad generic dispersive use of articles containing borates with low emission.	EE37-Professional installation of plates, plasterboards and other products.

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28	Construction materials	Use of consumption of construction materials				X	X	21	0	--	4	10a,11a	E27-Broad generic disperse use of articles containing borates with low emission	EE4-Consumer use of boron composite construction materials (other than insulators)
29	Construction materials	Lifetime of construction materials					X	--	--	--	4	10a, 11a	E27-Broad generic disperse use of articles containing borates with low emission.	--
30	Detergents	Formulation in detergents		X				3,10	35	2,3,4,5, 8b,9,15	--	2	E5-Borate formulation in detergents	EE7-Bag unloading processes (25-50kg) in mixing tanks. EE8-Processes of unloading bags "big bag" (750-1500kg) in mixing tanks. EE16-Production in closed environments at room temperature. EE18-Transfer of substances or preparations from or to large vessels or containers in specialized facilities. EE21-General maintenance activities EE22-Transfer of substances to small containers EE31-Compaction and tableting of boron compound powders EE32-Laboratory works.
31	Detergents	Professional use of detergents			X			22	35	1,2,3,11, 10,13,19	--	8a,8c,8d,8f	E23-Wide generic disperse use of borates with 100% water emission	EE4-Use of textile detergents in industrial or professional environments
32	Detergents	Use of detergent consumption				X		21	35	--	--	8a,8c,8d,8f	E23-Wide generic disperse use of borates with 100% water emission	EE1-Use of boron-containing detergents.
33	Glass	Production of glass wool	X	X				3,13, NACE 23,1	19	1,2,3,8b,22	4	2,5,6a	E14-Industrial use of borates in the manufacture of glass wool	EE2-Production in closed or semi-closed systems at high temperatures. EE16-Production in closed environments at room temperature. EE18-Transfer of substances or preparations from or to large vessels or containers in specialized facilities. EE21-General maintenance activities EE32-Laboratory works.
34	Glass	Production of alkaline glass with high emissions	X	X				3,13, NACE 23,1	19	1,2,3,8b,22	4	2,5,6a	E15-Industrial use of borates in the production of alkaline glass with high emissions	EE2-Production in closed or semi-closed systems at high temperatures. EE16-Production in closed environments at room temperature. EE18-Transfer of substances or preparations from or to large vessels or containers in specialized facilities. EE21-General maintenance activities EE32-Laboratory works.
35	Glass	Production of alkaline glass with low emissions	X	X				3,13 NACE 23,1	19	1,2,3,8b,22	4	2,5,6a	E16-Industrial use of borates in the production of alkaline glass with low emissions	EE2-Production in closed or semi-closed systems at high temperatures. EE16-Production in closed environments at room temperature. EE18-Transfer of substances or preparations from or to large vessels or containers in specialized facilities. EE21-General maintenance activities EE32-Laboratory works.
36	Industrial fluids	Formulation of borates in industrial fluids		X				3,8,9,10,15	20,24,25	3,4,5,8b,9		2	E4-Generic processes of borate formulation in preparations	EE2-Production in closed or semi-closed systems at high temperatures. EE7-Process of unloading bags (25-50kg) in mixing tanks. EE8-Processes of unloading bags "big bag" (750-1500kg) in mixing tanks. EE16-Production in closed environments at room temperature. EE18-Transfer of substances or preparations from or to large vessels or containers in specialized facilities. EE21-General maintenance activities. EE22-Transfer of substances to small containers. EE32-Laboratory works.
37	Industrial fluids	Industrial use of industrial fluids		X	X			3,15,17	19,20,24,25	1,2,6,8a, 8b,9,10,13,16 ,17,18,19 ,20,21,22, 23,24,26	--	2,4,5,7	E4-Generic processes of borate formulation in preparations. E9-Industrial use of borates as additives in processes and products. E11-Industrial use	EE2-Production in closed or semi-closed systems at high temperatures. EE7-Bag unloading processes (25-50kg) in mixing tanks. EE8-Processes of unloading bags "big bag" (750-1500kg) in mixing tanks. EE9-Dilution processes of liquid concentrate for metallurgy with water. EE12-Use of cleaning products in industrial or

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													of borates that results in inclusion in a matrix. E18- Generic industrial use of borates in closed nuclear systems.	professional environments. EE16- Production in closed environments at room temperature. EE17- Development of baths for surface treatments such as galvanizing or plating among others. EE18- Transfer of substances or preparations from or to large vessels or containers in specialized facilities. EE21- General maintenance activities. EE22- Transfer of substances to small containers. EE29- Galvanizing processes, plating and other surface treatments and metallic articles. EE32- Laboratory works. EE33- Use of liquid for metallurgy in mechanical works. EE34- Application of fats in high energy conditions.
38	Industrial fluids	Use of automotive liquids consumption				X		21	4,16,24	--	--	9a,9b	E27- Wide generic disperse use of articles that borates with low emission	EE08- Consumer exposure derived from the use of automotive liquids
39	Metallurgy	Formulation in alloys	X	X				3,14	7,19	8b,22,23,24	7	1,2	E2- Generic industrial use of borates that leads to the manufacture of other substances	EE2- Production in closed or semi-closed systems at high temperatures. EE7- Process of unloading bags (25-50kg) in mixing tanks. EE8- Processes of unloading bags "big bag" (750-1500kg) in mixing vats. EE18- Transfer of substances or preparations from or to large vessels or containers in specialized facilities. EE21- General maintenance activities. EE32- Laboratory works.
40	Metallurgy	Manufacture of flux mixtures and pastes	X	X				3,10,13	38	3,4,5,8b,9,14	--	2	E4- Generic processes of borate formulation in preparations	EE2- Production in closed or semi-closed systems at high temperatures. EE7- Process of unloading bags (25-50kg) in mixing tanks. EE8- Processes of unloading bags "big bag" (750-1500kg) in mixing vats. EE16- Production activities in closed environments at room temperature. EE18- Transfer of substances or preparations from or to large vessels or containers in specialized facilities. EE21- General maintenance activities. EE22- Transfer of substances to small containers. EE32- Laboratory works.
41	Metallurgy	Industrial use of flux in metal smelting processes (precious)				X		3,14	7,19	22	7	6b	E2- Generic industrial use of borates that results in the manufacture of another substance.	EE2- Production in closed or semi-closed systems at high temperatures. EE7- Process of unloading bags (25-50kg) in mixing tanks. EE8- Processes of unloading bags "big bag" (750-1500kg) in mixing vats. EE18- Transfer of substances or preparations from or to large vessels or containers in specialized facilities. EE21- General maintenance activities. EE22- Transfer of substances to small containers. EE32- Laboratory works.
42	Metallurgy	Industrial use of flux paste to coat welding rods and brazing				X		3,16	38	14	7	5	E11- Generic industrial use of borates that results in inclusion in a matrix.	EE24- Industrial use of flux paste to coat welding rod / source solder.
43	Metallurgy	Industrial / professional use of welding rod and brazing				X		3,14,15,17,19	38	13,25,26	--	4	E9- Generic industrial use of borates as additives in processes and products.	EE40- Industrial / professional use of fluxes in welding / brazing operations
44	Metallurgy	Use of borate in metal treatment processes (plating, neutralization, galvanizing, etc.)				X		3,15,17	14	3,4,5, 8a,8b	--	4	E9- Generic industrial use of borates as additives in processes and products.	EE17- Development of baths for surface treatments such as galvanizing or plating among others EE29- Galvanizing processes, plating and other surface treatments of metallic articles.
45	Pottery without oxides	Intermediate use in the production of ceramic powders without oxides.				X		8,9,13	19	3,4,8b,22,23, 24	4	1,2,5, 6a,6b	E2- Generic industrial use of borates that results in the manufacture of another substance. E4- Generic processes of borate formulation in	EE2- Production in closed or semi-closed systems at high temperatures. EE8- Processes of unloading bags "big bag" (750-1500kg) in mixing vats. EE18- Transfer of substances or preparations from or to large vessels or containers in specialized facilities. EE38- Grinding or crushing processes of boron-based

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														preparations. E11- Generic industrial use of borates that results in inclusion in a matrix.	powders.
46	Nuclear applications	Industrial use of borates in closed nuclear systems			X			23	37	1,2,8b	--	7		E19- Industrial use of borates in nuclear plants with emissions to water. E20- Industrial use of borates in nuclear plants without emissions to water.	EE7-Process of unloading bags (25-50kg) in mixing tanks. EE8-Processes of unloading bags "big bag" (750-1500kg) in mixing vats. EE16-Production activities in closed environments at room temperature. EE18-Transfer of substances or preparations from or to large vessels or containers in specialized facilities. EE32-Laboratory works.
47	Oil industry	Formulation in cement		X				2b	K35100	2,3,8b	--	2		E4-Generic processes of borate formulation in preparations	EE16-Production in closed environments at room temperature. EE18-Transfer of substances or preparations from or to large vessels or containers in specialized facilities. EE21-General maintenance activities. EE32-Laboratory works.
48	Oil industry	Industrial use of cement			X			2b	K35100	8b,4	--	5		E11-Generic industrial use of borates that results in inclusion in a matrix	EE16-Production in closed environments at room temperature. EE18-Transfer of substances or preparations from or to large vessels or containers in specialized facilities. EE32-Laboratory works.
49	Photography	Formulación en soluciones fotográficas		X				3,10	20,30	4,5,8b,9	--	2		E4-Generic processes of borates in preparations.	EE7-Process of unloading bags (25-50kg) in mixing tanks. EE8-Processes of unloading bags "big bag" (750-1500kg) in mixing vats. EE22-Transfer of substances to small containers.
50	Photography	Industrial use of photographic solutions			X			3	30	19	--	4		E9-Generic industrial use of borates as additives in processes and products	EE35-Processes of preparation of reservation solution for photographic applications.
51	Formulation in photographic solutions	Professional use of photographic solutions.			X			22	30	13,19	--	8a		E23-Wide generic dispersive use of borates with 100% emission to water.	EE30-Use of development solutions and fixers. EE35-Processes of preparation of reservation solution for photographic applications.
53	Printing paper	Borate formulation in PVA solutions		X				3,10	20	4,5,8b	--	1,6a,6b		E2-Generic industrial use of borates that results in the manufacture of another substance	EE7-Bag unloading processes (25-50kg) in mixing tanks. EE8-Processes of unloading bags "big bag" (750-1500kg) in mixing vats.
54	Refractory products	Formulation in mixtures of refractory products		X				3,15,10	0	1,2,3,4,5,8a,9 ,21,22,23,24	4	2,3		E4-Generic processes of borate formulation in preparations. E8-Generic processes of borate formulation in materials.	EE7-Process of unloading bags (25-50kg) in mixing tanks. EE8-Processes of unloading bags "big bag" (750-1500kg) in mixing vats. EE13-Processes of preparation and application of refractory mixtures. EE16-Production activities in closed environments at room temperature. EE18-Transfer of substances or preparations from or to large vessels or containers in specialized facilities. EE21-General maintenance activities. EE22-Transfer of substances to small containers. EE31-Compaction and tableting of boron compound powders. EE32-Laboratory works.
55	Refractory products	Industrial use of refractory product mixtures			X		X	3,14	15	7,14,19	--	5		E11-Generic industrial use of borates that results in inclusion in a matrix	EE13-Processes of preparation and application of refractory mixtures.
56	Manufacture and use of pills	Manufacture of pads for swimming pools		X				3	37	2,3,4,5,8b,9,1 5,19	--	5		E11-Generic industrial use of borates that results in inclusion in a matrix	EE7-Process of unloading bags (25-50kg) in mixing tanks. EE8-Processes of unloading bags "big bag" (750-1500kg) in mixing vats. EE16-Production activities in closed environments at room temperature. EE18-Transfer of substances or preparations from or to large vessels or containers in specialized facilities. EE21-General maintenance activities. EE22-Transfer of substances

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														to small containers. EE31-Compaction and tableting of boron compound powders. EE32-Laboratory works.
57	Manufacture and use of pills	Use of pads for swimming pools			X			22	--	0	--	8a,8d	E23-Wide generic dispersive use of borates with 100% emission to water.	EE1-Professional use of pool pads
58	Toys	Use of clay modeling consumption				X		21	9b	--	--	11a	E27-Broad generic dispersive use of articles containing borates with low emission.	EEC7-Use of modeling clay consumption.

Note: The numbering of the ID Uses and the Scenarios is correct. Although the numbering may seem incongruous in some cases, it is not an error. There is no lack of documents.