

# SAFETY DATA SHEET

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

## GRIAL

Version: 0

Revision date: 25/04/2019



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### SECTION 1: IDENTIFICATION OF THE MIXTURE AND OF THE COMPANY/UNDERTAKING.

#### 1.1 Product identifier.

Product Name: GRIAL  
Product number: HS-7290  
Registry number: AUD-AD-140-2298  
Composition: Deltamethrin 2.5% w/v EC

#### 1.2 Relevant identified uses of the mixture and uses advised against.

INSECTICIDE.

#### Uses advised against:

Uses other than those recommended.

#### 1.3 Details of the supplier of the safety data sheet.

Company: **Industrias AFRASA, S.A.**  
Address: CIUDAD DE SEVILLA 53. POL.IND. FUENTE DEL JARRO  
City: PATERNA  
Province: VALENCIA  
Telephone: 961321700  
Fax: 961321716  
E-mail: [afrasa@afrasa.es](mailto:afrasa@afrasa.es)  
Web: [www.afrasa.es](http://www.afrasa.es)

#### 1.4 Emergency telephone number:

Industrias Afrasa, S.A. +34 96 132 17 00 (Only available during office hours)

### SECTION 2: HAZARDS IDENTIFICATION.

#### 2.1 Classification of the mixture.

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

- Asp. Tox. 1 : May be fatal if swallowed and enters airways.
- Eye Dam. 1 : Causes serious eye damage.
- Acute Tox. 4 : Harmful if swallowed.
- Flam. Liq. 3 : Flammable liquid and vapour.
- Skin Irrit. 2 : Causes skin irritation.
- Aquatic Acute 1 : Very toxic to aquatic life.
- Aquatic Chronic 1 : Very toxic to aquatic life with long lasting effects.

#### 2.2 Label elements.

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

Pictograms:



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Signal Word:

### Danger

H statements:

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H336	May cause drowsiness or dizziness.
H410	Very toxic to aquatic life with long lasting effects.

P statements:

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302+P352	IF ON SKIN: Wash with plenty of water the affected area.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P391	Collect spillage.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P235	Keep cool.
P501	Dispose of contents/container to ...

EUH statements:

EUH401	To avoid risks to human health and the environment, comply with the instructions for use.
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Contains:

Isobutanol

A complex combination of hydrocarbons obtained by treating a petroleum fraction with hydrogen in the presence of a catalyst. It consists of hydrocarbons having carbon numbers predominantly in the range of C11 through C25 and boiling in the range of approximately 205°C to 400°C (401°F to 752°F)., Distillates (petroleum), hydrotreated middle, Gasoil - unspecified  
Calcium dodecylbenzene sulfonate

SP1: Do not contaminate water with the product or its container. Do not clean application equipment near surface water. Avoid contamination via drains from farmyards and roads.

SPo2: Wash all protective clothing after use.

SPe3 (1): To protect aquatic organisms respect an unsprayed buffer zone of 30 metres to surface water bodies in tomato, aubergine, courgette, cucumber and gherkin both in fields and greenhouses / 30 m in melon, watermelon and strawberry in field / 20 m of which 10 m must have a vegetation cover using 75% drift reduction nozzles in cauliflower, cabbage and broccoli / 30 m in olive trees.

SPe3 (2): To protect non-target arthropods, respect an unsprayed buffer zone of 20 meters to non-agricultural land or respect and unsprayed buffer zone of 15 meters to non-agricultural lands using 30% drift reduction nozzles in olive trees.

SPo5: Ventilate treated areas/greenhouses until spray has dried before re-entry.  
The preparation shall not be used in combination with other products.

SPe8: Dangerous to bees. To protect bees and other pollinating insects do not apply to crop plants when in flower. Do not use where bees are actively foraging. Do not apply when flowering weeds are present.

### 2.3 Other hazards.

In normal use conditions and in its original form, the product itself does not involve any other risk for health and the environment.

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### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS.

#### 3.1 Substances.

Not Applicable.

#### 3.2 Mixtures.

Substances posing a danger to health or the environment in accordance with the Regulation (EC) No. 1272/2008, assigned a Community exposure limit in the workplace, and classified as PBT/vPvB or included in the Candidate List:

Identifiers	Name	Concentrate	(*)Classification - Regulation (EC) No 1272/2008	
			Classification	specific concentration limit
EC No: 918-811-1 Registration No: 01-2119463583-34-XXXX	Hydrocarbons, C10, aromatics, <1% naphthalene	>25%	Aquatic Chronic 2, H411 - Asp. Tox. 1, H304 - STOT SE 3, H336	-
CAS No: 26264-06-2 EC No: 247-557-8	Calcium dodecylbenzene sulfonate	<5%	Aquatic Chronic 4, H413 - Eye Dam. 1, H318 - Skin Irrit. 2, H315	-
Index No: 603-108-00-1 CAS No: 78-83-1 EC No: 201-148-0 Registration No: 01-2119484609-23-XXXX	[1] Isobutanol	<2%	Eye Dam. 1, H318 - Flam. Liq. 3, H226 - STOT SE 3, H335 - STOT SE 3, H336 - Skin Irrit. 2, H315	-
CAS No: 128-37-0 EC No: 204-881-4 Registration No: 01-2119565113-46-XXXX	[1] 2,6-di-tert-butyl-p-cresol	<1%	Aquatic Chronic 1, H410 (M=1)	-
Index No: 607-319-00-X CAS No: 52918-63-5 EC No: 258-256-6	Deltamethrin	2.5%	Acute Tox. 3 *, H331 - Acute Tox. 3 *, H301 - Aquatic Acute 1, H400 (M=1000000) - Aquatic Chronic 1, H410 (M=1000000)	-

(\*) The complete text of the H phrases is given in section 16 of this Safety Data Sheet.

\* See Regulation (EC) No. 1272/2008, Annex VI, section 1.2.

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

### SECTION 4: FIRST AID MEASURES.

IRRITANT PREPARATION. Its repeated or prolonged contact with the skin or mucous membranes can cause irritant symptoms such as reddening of the skin, blisters, or dermatitis. Some of the symptoms may not be immediate. They can cause allergic reactions on the skin.

#### 4.1 Description of first aid measures.

In case of doubt or when symptoms of feeling unwell persist, get medical attention. Never administer anything orally to persons who are unconscious.

##### Inhalation.

Take the victim into open air; keep them warm and calm. If breathing is irregular or stops, perform artificial respiration. Do not administer anything orally. If unconscious, place them in a suitable position and seek medical assistance.

##### Eye contact.

Wash eyes with plenty of clean and cool water for at least 10 minutes while pulling eyelids up, and seek medical assistance. Don't let the person to rub the affected eye.

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### Skin contact.

Remove contaminated clothing. Wash skin vigorously with water and soap or a suitable skin cleaner. NEVER use solvents or thinners.

### Ingestion.

If accidentally ingested, seek immediate medical attention. Keep calm. NEVER induce vomiting.

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

Corrosive Product, contact with eyes or skin can cause burns; ingestion or inhalation can cause internal damage, if this occurs immediate medical assistance is required.

Harmful Product, prolonged exposure due to inhalation may cause anaesthetic effects and the need for immediate medical assistance.

Contact with eyes may cause irreversible damage.

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

In case of doubt or when symptoms of feeling unwell persist, get medical attention. Never administer anything orally to persons who are unconscious. Do not induce vomiting. If the person vomits, clear the respiratory tract.

## **SECTION 5: FIREFIGHTING MEASURES.**

Flammable product, the necessary prevention measures should be taken in order to avoid risks, In case of fire, the following measures are recommended:

### **5.1 Extinguishing media.**

#### Suitable extinguishing media:

Extinguisher powder or CO<sub>2</sub>. 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 mixture.**

#### Special risks.

Fire can cause thick, black smoke. As a result of thermal decomposition, dangerous products can form: carbon monoxide, carbon dioxide. Exposure to combustion or decomposition products can be harmful to your health.

During a fire and depending on its magnitude the following may occur:

- Flammable vapors or gases.

### **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. Product residues and extinguishing media may contaminate the aquatic environment. Follow the instructions given in the emergency or fire evacuation plan or plans if available.

#### 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. During extinction and depending on the magnitude and proximity to the fire, additional protective equipment such as chemical protection gloves, heat-reflecting suits or gas-tight suits may be required.

## **SECTION 6: ACCIDENTAL RELEASE MEASURES.**

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

Eliminate possible ignition points and ventilate the area. No smoking. Avoid breathing fumes. For exposure control and individual protection measures, see section 8.

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### 6.2 Environmental precautions.

Product dangerous for the environment, in case of large spills or if the product contaminates lakes, rivers, or sewers, inform the responsible authorities according to local legislation. Prevent the contamination of drains, surface or subterranean waters, and the ground.

### 6.3 Methods and material for containment and cleaning up.

Pick up the spill with non-combustible absorbent materials (soil, sand, vermiculite, diatomite, etc.). Pour the product and the absorbent in an appropriate container. The contaminated area should be immediately cleaned with an appropriate decontaminator. Pour the decontaminator on the remains in an opened container and let it act various days until no further reaction is produced.

### 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.

The fumes are heavier than air and can spread across the ground. They can form explosive mixtures with air. Prevent the creation of flammable or explosive fume concentrations in the air; prevent fume concentrations above work exposure limits. The product must only be used in areas where all unprotected flames and other ignition points have been eliminated. Electrical equipment has to be protected according to applicable standards.

The product can be electrostatically charged: always use earth grounds when transferring the product. Operators must use anti-static footwear and clothing, and floors must be conductors.

Keep the container tightly closed and isolated from heat sources, sparks, and fire. Do not use tools that can cause sparks. For personal protection, see section 8.

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

Follow legislation on occupational health and safety.

Never use pressure to empty the containers. They are not pressure-resistant containers. 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-authorized persons. Once the containers are open, they must be carefully closed and placed vertically to prevent spills.

Classification and threshold amount of storage in accordance with Annex I to Directive 2012/18/EU (SEVESO III):

Code	Description	Qualifying quantity (tonnes) for the application of	
		Lower-tier requirements	Upper-tier requirements
E2	ENVIRONMENTAL HAZARDS - Hazardous to the Aquatic Environment in Category Chronic 2	200	500

### 7.3 Specific end use(s).

Agricultural insecticide for professional use.

Use reserved for farmers and professional users.

Uses of the product indicated in the label.

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### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION.

#### 8.1 Control parameters.

Work exposure limit for:

Name	CAS No.	Country	Limit value	ppm	mg/m <sup>3</sup>
Isobutanol	78-83-1	United Kingdom [1]	Eight hours	50	154
			Short term	75	231
		United States [2] (Cal/OSHA)	Eight hours	50	
			Short term		
		United States [3] (NIOSH)	Eight hours	50	
			Short term		
United States [4] (OSHA)	Eight hours	100	300		
	Short term				
2,6-di-tert-butyl-p-cresol	128-37-0	United Kingdom [1]	Eight hours		10
			Short term		

[1] According Limit Value (IOELV) list in 2nd Indicative Occupational Exposure adopted by Health and Safety Executive.

[2] California Division of Occupational Safety and Health (Cal/OSHA) Permissible Exposure Limits (PELs).

[3] National Institute for Occupational Safety and Health. NIOSH Recommendations for occupational safety and health, Compendium of Policy Documents and Statements, January, 1992, DHHS (NIOSH) Publication No. 92-100.

[4] Occupational Safety and Health Administration, United States Department of Labor. Permissible Exposure limits (PELs), California Division of Occupational Safety and Health (Cal/OSHA) Permissible Exposure Limits (PELs).

The product does NOT contain substances with Biological Limit Values.

Concentration levels DNEL/DMEL:

Name	DNEL/DMEL	Type	Value
Isobutanol CAS No: 78-83-1 EC No: 201-148-0	DNEL (Workers)	Inhalation, Long-term, Local effects	310 (mg/m <sup>3</sup> )
	DNEL (General population)	Inhalation, Long-term, Local effects	55 (mg/m <sup>3</sup> )
2,6-di-tert-butyl-p-cresol CAS No: 128-37-0 EC No: 204-881-4	DNEL (Workers)	Inhalation, Long-term, Systemic effects	3,5 (mg/m <sup>3</sup> )

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
Isobutanol CAS No: 78-83-1 EC No: 201-148-0	aqua (freshwater)	0,4 (mg/L)
	aqua (marine water)	0,04 (mg/L)
	aqua (intermittent releases)	11 (mg/L)
	STP	10 (mg/L)
	sediment (freshwater)	1,52 (mg/kg sediment dw)
	sediment (marine water)	0,152 (mg/kg sediment dw)
	soil	0,0699 (mg/kg soil dw)

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

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### 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.

<b>Concentration:</b>	<b>100 %</b>				
<b>Uses:</b>	<b>INSECTICIDE.</b>				
<b>Breathing protection:</b>					
PPE:	Filter mask for protection against gases and particles.				
Characteristics:	«CE» marking, category III. The mask must have a wide field of vision and an anatomically designed form in order to be sealed and watertight.				
CEN standards:	EN 136, EN 140, EN 405				
Maintenance:	Should not be stored in places exposed to high temperatures and damp environments before use. Special attention should be paid to the state of the inhalation and exhalation valves in the face adaptor.				
Observations:	Read carefully the manufacturer's instructions regarding the equipment's use and maintenance. Attach the necessary filters to the equipment according to the specific nature of the risk (Particles and aerosols: P1-P2-P3, Gases and vapours: A-B-E-K-AX), changing them as advised by the manufacturer.				
Filter Type needed:	A2				
<b>Hand protection:</b>					
PPE:	Protective gloves against chemicals.				
Characteristics:	«CE» marking, category III.				
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	Material thickness (mm):	0,35
<b>Eye protection:</b>					
PPE:	Protective goggles against particle impacts.				
Characteristics:	«CE» marking, category II. Eye protector against dust and smoke.				
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.				
<b>Skin protection:</b>					
PPE:	Chemical protective clothing				
Characteristics:	«CE» marking, category III. Clothing should fit properly. The level of protection must be set according to a test parameter called BT (Breakthrough Time), which indicates how long it takes for the chemical to pass through the material.				
CEN standards:	EN 464, EN 340, EN 943-1, EN 943-2, EN ISO 6529, EN ISO 6530, EN 13034				
Maintenance:	In order to guarantee uniform protection, follow the washing and maintenance instructions provided by the manufacturer.				
Observations:	The protective clothing's design should facilitate correct positioning, staying in place without moving for the period of use expected, bearing in mind environmental factors as well as any movement or position the user might adopt while carrying out the activity.				
PPE:	Anti-static safety footwear against chemicals.				
Characteristics:	«CE» marking, category III. Check the list of chemicals against which the footwear is resistant.				
CEN standards:	EN ISO 13287, EN 13832-1, EN 13832-2, EN 13832-3, EN ISO 20344, EN ISO 20345				
Maintenance:	For correct maintenance of this kind of safety footwear, it is necessary to observe the instructions specified by the manufacturer. The footwear should be replaced as soon as any sign of damage is observed.				

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Observations: The footwear should be cleaned regularly and dried when damp, although it should not be placed too close to a source of heat in order to avoid any sharp changes in temperature.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES.

### 9.1 Information on basic physical and chemical properties.

Appearance: Liquid  
Colour: Pale yellow  
Odour: Chemical  
Odour threshold: N.A./N.A.  
pH: 5.56  
Melting point: N.A./N.A.  
Boiling Point: N.A./N.A.  
Flash point: 57 °C  
Evaporation rate: N.A./N.A.  
Inflammability (solid, gas): N.A./N.A.  
Lower Explosive Limit: N.A./N.A.  
Upper Explosive Limit: N.A./N.A.  
Vapour pressure: N.A./N.A.  
Vapour density: N.A./N.A.  
Relative density: N.A./N.A.  
Solubility: N.A./N.A.  
Liposolubility: N.A./N.A.  
Hydrosolubility: N.A./N.A.  
Partition coefficient (n-octanol/water): N.A./N.A.  
Auto-ignition temperature: N.A./N.A.  
Decomposition temperature: N.A./N.A.  
Viscosity: N.A./N.A.  
Explosive properties: Not explosive  
Oxidizing properties: Not oxidizing

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

### 9.2 Other information.

Dropping point: N.A./N.A.  
Blink: N.A./N.A.  
Kinematic viscosity: N.A./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.

If the storage conditions are satisfied, does not produce dangerous reactions.

### 10.2 Chemical stability.

Unstable in contact with:  
- Bases.

### 10.3 Possibility of hazardous reactions.

Flammable liquid and vapour.  
Neutralization can occur on contact with bases.

### 10.4 Conditions to avoid.

Avoid the following conditions:  
- High temperature.

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- Static discharge.
- Contact with incompatible materials.
- Avoid contact with bases.
- Avoid temperatures near or above the flash point. Do not heat closed containers. Avoid direct sunlight and heat, as these may cause a risk of fire.

### 10.5 Incompatible materials.

Avoid the following materials:

- Bases.
- Explosives materials.
- Toxic materials.
- Oxidizing materials.

### 10.6 Hazardous decomposition products.

Depending on conditions of use, can be generated the following products:

- Corrosive vapors or gases.

In case of fire, dangerous decomposition products can be generated, such as carbon monoxide and dioxide and nitrogen fumes and oxides.

## SECTION 11: TOXICOLOGICAL INFORMATION.

IRRITANT PREPARATION. Its repeated or prolonged contact with the skin or mucous membranes can cause irritant symptoms such as reddening of the skin, blisters, or dermatitis. Some of the symptoms may not be immediate. They can cause allergic reactions on the skin.

### 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.

#### Toxicological information about the substances present in the composition.

Name	Acute toxicity			
	Type	Test	Kind	Value
Isobutanol  CAS No: 78-83-1      EC No: 201-148-0	Oral	LD50	Rat	2830 mg/kg bw [1]
		[1] Christopher, S.M. November 30, 1993. "Isobutanol: Acute toxicity and irritancy testing using the rat (peroral and inhalation toxicity) and the rabbit (cutaneous and ocular tests)". Bushy Run Research Center, Union Carbide Corp. Lab. Proj. ID 92U1166		
	Dermal	LD50	Rabbit	4240 mg/kg bw [1]
		[1] Smyth H.F. Jr. et al.: AMA Arch. Ind. Hyg. Occup. Med., 10, 61-68, (1954) as cited in IUCLID.		
		Inhalation		

a) acute toxicity;

Name	Acute toxicity			
	Type	Test	Kind	Value
GRIAL	Oral	LD50	Rat	310 mg/kg
	Dermal	LD50	Rat	>2000 mg/kg
	Inhalation	LC50	Rat	>0.6 mg/L air (4 h)

Product classified:

Acute toxicity (Oral), Category 4: Harmful if swallowed.

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b) skin corrosion/irritation;

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<b>Skin irritation (rabbit)</b>	Irritant

Product classified:

Skin irritant, Category 2: Causes skin irritation.

c) serious eye damage/irritation;

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<b>Eye irritation (rabbit)</b>	Irritant

Product classified:

Serious eye damage, Category 1: Causes serious eye damage.

d) respiratory or skin sensitisation;

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<b>Skin sensitisation (Guinea pigs)</b>	Not sensitizer

e) germ cell mutagenicity;

Not conclusive data for classification.

f) carcinogenicity;

Not conclusive data for classification.

g) reproductive toxicity;

Not conclusive data for classification.

h) STOT-single exposure;

Based on available data, the classification criteria are not met.

i) STOT-repeated exposure;

Product classified:

Specific target organ toxicity following a repeated exposure, Category 2: May cause damage to organs through prolonged or repeated exposure.

j) aspiration hazard;

Product classified:

Aspiration toxicity, Category 1: May be fatal if swallowed and enters airways.

## SECTION 12: ECOLOGICAL INFORMATION.

### 12.1 Toxicity.

Name	Ecotoxicity			
	Type	Test	Kind	Value
Isobutanol	Fish	EC50	Pimephales promelas	1430 mg/L (96 h h) [1]
				[1] Brooke, L.T. et al., 1984. Acute Toxicities of Organic Chemicals to Fathead Minnows (Pimephales promelas). Vol. I. Center for Lake Superior Environmental Studies. University of Wisconsin-Superior.
	Aquatic invertebrates	EC50	Daphnia magna	1300 mg/L (48 h) [1]
				[1] Elnabarawy MT, Welter AN, Robideau RR. 1986. relative sensitivity of three daphnid species to selected organic and inorganic chemicals. Environ Toxicol Chem 5: 393-398.

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CAS No: 78-83-1	EC No: 201-148-0	Aquatic plants	EC90 Senastrum capricornutum (Pseudokirchnerella subcapitata) 717 mg/L (96 h) [1] [1] Wong, D.C.L, P.B. Dorn, and J.P. Salanitro. 1998. Aquatic Toxicity of Four Oxy-Solvents. Equilon Enterprises, LLC Technical Information Record WTC-3520.
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Name	Ecotoxicity			
	Type	Test	Kind	Value
GRIAL	Fish	LC50	Oncorhynchus mykiss	34.2 µg/L (96 h)
	Aquatic invertebrates	EC50	Daphnia magna	0.935 µg/L (48 h)
	Aquatic plants	ErC50	Pseudokirchneriella subcapitata	78.7 mg/L (72 h)
		EyC50		42.1 mg/L (72 h)
	Avian	LC50	-	> 1000 mg/kg
	Bees	LD50	-	280 ng a.s./bee (oral)
LD50		10 ng a.s./bee (contact) (48 h)		

### 12.2 Persistence and degradability.

No information is available regarding the biodegradability of the substances present.  
No information is available on the degradability of the substances present. No information is available about persistence and degradability of the product.

### 12.3 Bioaccumulative potential.

Information about the bioaccumulation of the substances present.

Name	Bioaccumulation			
	Log Pow	BCF	NOECs	Level
Isobutanol CAS No: 78-83-1      EC No: 201-148-0	0,76	-	-	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.

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

Waste classification according to the European Waste Catalogue:

02 WASTES FROM AGRICULTURE, HORTICULTURE, AQUACULTURE, FORESTRY, HUNTING AND FISHING, FOOD PREPARATION AND PROCESSING

02 01 wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing

02 01 08 agrochemical waste containing hazardous substances

Waste classified as hazardous.

Method of treatment according to Directive 2008/98/EC:

Disposal

D10 Incineration on land

Containers completely emptied must not be released into the environment. Rinse vigorously three times each package you use, pour the wash water to spray tank. This package once-use empty its contents, is a toxic waste so the user is required to deliver at the point of receipt of the integrated management system or to the dealer where the product was purchased.

### SECTION 14: TRANSPORT INFORMATION.

Transport following ADR rules for road transport, RID rules for railway, ADN for inner waterways, IMDG for sea, and ICAO/IATA for air transport.

**Land:** Transport by road: ADR, Transport by rail: RID.

Transport documentation: Consignment note and written instructions

**Sea:** Transport by ship: IMDG.

Transport documentation: Bill of lading

**Air:** Transport by plane: ICAO/IATA.

Transport document: Airway bill.

#### 14.1 UN number.

UN No: UN1993

#### 14.2 UN proper shipping name.

Description:

ADR: UN 1993, FLAMMABLE LIQUID, N.O.S. (ISOBUTANOL / DELTAMETHRIN), 3, PG III, (D/E)

IMDG: UN 1993, FLAMMABLE LIQUID, N.O.S. (ISOBUTANOL / DELTAMETHRIN / HYDROCARBONS), 3, PG III (57°C), MARINE POLLUTANT

ICAO/IATA: UN 1993, FLAMMABLE LIQUID, N.O.S. (ISOBUTANOL / DELTAMETHRIN), 3, PG III

#### 14.3 Transport hazard class(es).

Class(es): 3

#### 14.4 Packing group.

Packing group: III

#### 14.5 Environmental hazards.

Marine pollutant: Yes



Dangerous for the environment

#### 14.6 Special precautions for user.

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F-E,S-ELabels: 3



Hazard number: 30

ADR LQ: 5 L

IMDG LQ: 5 L

ICAO LQ: 10 L

Provisions concerning carriage in bulk ADR: Not authorized carriage in bulk in accordance with ADR.

Transport by ship, FEm – Emergency sheets (F – Fire, S - Spills):

Proceed in accordance with point 6.

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

The product is not transported in bulk.

## SECTION 15: REGULATORY INFORMATION.

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

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.

Product classification according to Annex I of Directive 2012/18/EU (SEVESO III): E2

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.

### 15.2 Chemical safety assessment.

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

## SECTION 16: OTHER INFORMATION.

Cause of revision and modifications with respect to previous version: initial

Complete text of the H phrases that appear in section 3:

H226	Flammable liquid and vapour.
H301	Toxic if swallowed.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H331	Toxic if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H413	May cause long lasting harmful effects to aquatic life.

Classification codes:

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Acute Tox. 3 : Acute toxicity (Inhalation), Category 3  
Acute Tox. 3 : Acute toxicity (Oral), Category 3  
Acute Tox. 4 : Acute toxicity (Oral), Category 4  
Aquatic Acute 1 : Acute toxicity to the aquatic environment, Category 1  
Aquatic Chronic 1 : Chronic effect to the aquatic environment, Category 1  
Aquatic Chronic 2 : Chronic effect to the aquatic environment, Category 2  
Aquatic Chronic 4 : Chronic effect to the aquatic environment, Category 4  
Asp. Tox. 1 : Aspiration toxicity, Category 1  
Eye Dam. 1 : Serious eye damage, Category 1  
Flam. Liq. 3 : Flammable liquid, Category 3  
STOT SE 3 : Specific target organ toxicity following a single exposure, Category 3  
Skin Irrit. 2 : Skin irritant, Category 2

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

### Abbreviations and acronyms used:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.  
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.  
IATA: International Air Transport Association.  
ICAO: International Civil Aviation Organization.  
IMDG: International Maritime Code for Dangerous Goods.  
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.  
RID: Regulations Concerning the International Transport of Dangerous Goods by Rail.

### 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.

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