

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade Name : BUGUIS

Technical Name: 100 g/L Clodinafop-propargyl (ISO) and
25 g/L Cloquintocet-mexyl (ISO) as
emulsifiable concentrate formulation (EC)

1.2. Relevant identified uses

Herbicide for professional agricultural uses. Authorized uses are detailed on the label of the commercial containers.

1.3. Supplier of the safety data sheet

Company : Proplan-Plant Protection Company.
Address : C/ Valle del Roncal, 12.
28232-Las Rozas. Madrid- SPAIN
Phone : + 34 91 626 60 97
e-mail : info@proplanppc.es

1.4. Emergency telephone number (Spain)

Instituto Nacional de Toxicología: +34 91 562 04 20

2. HAZARDS IDENTIFICATION

2.1. Classification of the mixture

Classification and Hazard Statements. According to Regulation (EC) No. 1272/2008

Asp. 1	: Aspiration toxicity, Category 1	H304
Eye Irrit. 2	: Eye irritant, Category 2	H319
Skin Sens. 1	: Skin sensitization, Category 1	H317
STOT-RE 2	: Specific target organs toxicity-Repetitive exposure, category 2.	H373
Aq. Chronic 1	: Chronic aquatic toxicity Cat.1	H411

2.2. Label elements

According to Regulation (EC) No1272/2008

Marks & Pictograms:



Signal word: Danger

Hazard statements according to Regulation (EC) No. 1272/2008.

H304	: May be fatal if swallowed and enters airways
H319	: Causes serious eye irritation
H317	: May cause an allergic skin reaction
H373	: May cause damage to organs through prolonged exposure.
H411	: Toxic to aquatic life with long lasting effects

Precautionary statements According to Regulation (EC) No. 1272/2008 and GHS.

P261	: Avoid breathing fumes of sprays
P264	: Wash hands thoroughly after handling
P272	: Contaminated work clothing should not be allowed out the workplace
P280	: Wear protective gloves/eye protection /face protection.
P301+P310	: IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician
P305+P351+P338	: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P314	: Get medical advice/attention if you feel unwell.
P331	: Do NOT induce vomiting.
P337+P313	: If eye irritation persists get medical advice/attention
P405	: Store locked up.
P501	: Dispose of contents/container to ... a licensed disposal company ... in accordance with local regulation.

Supplementary statements

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

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

The preparation does not present a risk of explosion due to the formation of dust as it is a liquid product.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Preparation/ Mixture.

Identity and classification of dangerous components:

Chemical identity	CAS-No.	EC-No.	Classification and Sentences Reg (EC) 1272/2008	Conc. (w/w)
ISO Name: clodinafop-propargyl IUPAC Name: 2-propynyl (R)-2-[4-(5-chloro-3-fluoro-2-pyridinyloxy)-phenoxy]-propionate	105512-06-9	600-662-6	Acute Tox. 4 H302 STOT RE 2 H373 Skin Sens. 1 H317 Aquatic Acute 1 H400 Aquatic Chronic 1 H410	10,4%
ISO Name: Cloquintocet-mexyl IUPAC Name: (RS)-1-methylhexyl (5-chloroquinolin-8-yloxy) acetate (IUPAC)	99607-70-2	619-447-3	Skin Sens. 1 H317	2,6%
Surfactant (mixture containing anionic sulphonate)	Proprietary		Skin Irrit. 2 H315 Eye Dam. 1 H318 Acute Tox. 4 (Inh) H332 STOT-SE 3 (Resp. S.) H335 Aq. Chronic. 3 H412	>1;<5%
Solvents (mixture containing solvent naphta*)	*64742-94-5	*265-198-5	Asp. Tox. 1 H304 STOT SE 3 (CNS) H336 Eye Irrit.2 H319 Aq. Chronic 2 H411	>60%; <85%

For the full text of the H-statements mentioned in this section, see section 16.

4. FIRST AID MEASURES**4.1. Description of first measures**

General advice: Never give fluids or induce vomiting if patient is unconscious or is having convulsions. Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled: If breathed in, move person into fresh air. Consult a physician.

In case of skin contact: Wash with plenty of soap and water, including hair and under fingernails. Consult a physician if irritation occurs.

In case of eye contact: Immediately rinse eyes with a large amount of running water as a precaution. Hold eye lids apart to rinse the entire surface of de eyes and lids for at least 15 minutes. Remove contact lenses. If effects occur, consult a physician.

If swallowed: **DO NOT INDUCE VOMITING:** contains petroleum distillates and/or aromatic solvents. Seek medical advice immediately and show this safety sheet.

4.2. Most important symptoms and effects

Exposure may cause irritation to eye, skin and breathing tract. If swallowed nausea and vomiting may occur.

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

There is no specific antidote available. Treat symptomatically. Do not induce vomiting: contains petroleum distillates and/or aromatic solvents.

5. FIRE-FIGHTING MEASURES**5.1. Extinguishing media**

Small fires: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Large fires: Use alcohol-resistant foam.

Extinguishing media which must not be used for safety reasons: Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazard arising from the substance or mixture

Hazardous decomposition products formed under fire conditions. Combustion products include: carbon oxides, nitrogen oxides, hydrogen chloride and hydrogen fluoride

5.3. Advice for firefighters

Wear full protective clothing and self-contained breathing apparatus for firefighting if necessary.

Further information:

Do not allow run-off from firefighting to enter drains or water courses.

Cool closed containers exposed to fire with water spray.

Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

6. ACCIDENTAL RELEASE MEASURES**6.1. Personal precautions, protective equipment and emergency procedures****6.1.1. For non-emergency personnel**

Wear suitable protective equipment (including personal protective equipment referred to under section 8 of this safety data sheet) to prevent any contamination of skin, eyes and personal clothing.

Remove all ignition sources, avoid vapour or mists formation and ensure adequate ventilation.

Follow the emergency procedures established at the site (factory, warehouse, etc.), such as the need to evacuate the danger area, or consult an expert.

6.1.2 For emergency personnel

There are not limited materials for personal protective clothing. Wear safety glasses with side shields or chemical goggles, rubber gloves, rubber boots, long-sleeved shirt, long pants, head covering and a approved pesticide respirator with a filter for aromatic solvents.

6.2. Environmental precautions

Keep product away from drains, surface and ground water. Discharge into the environment must be avoided.

6.3. Methods and materials for containment and cleaning up**6.3.1. Advice on how contain a spill.**

Do not allow wash or firefighting water to contaminate water supplies or enter in public drainage: use bounders or covers to protect drains.

Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

6.3.2. Advice on how to clean up a spill.

a) Neutralization techniques: not applicable.

b) Decontamination techniques: Contain and collect spillage with non-combustible adsorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

Wash the spill area with water containing a strong detergent, absorb with pet litter or other absorbent material, sweep up and place in a chemical container

c) Adsorbent materials: sand, earth, diatomaceous earth, vermiculite.

d) Cleaning techniques: Wash the spill area with water containing a strong detergent, absorb with pet litter or other absorbent material, sweep up and place in a chemical container. Seal the container and handle in an approved manner (dispose as local regulatory management for dangerous residues). Flush the area with water to remove any residue.

e) Vacuuming techniques: not required.

f) Equipment required for containment/clean up: brooms, shovel and container for dangerous residues.

6.4. Reference to other sections

See section 8 and 13 of this safety data sheet.

7. HANDLING AND STORAGE**7.1. Precautions for safe handling**

The usual precautions for handling chemicals should be observed. Prevent handling of incompatible materials, such as acids, alkalis and strong oxidizing agents.

Prevent the release of the substance to the environment, such as avoiding spills or keeping away from drains. Provide bounders and/or covers to protect drains.

Containment and/or segregation is the most reliable technical protection measure if exposure cannot be eliminated. The extent of these protection measures depends on the actual risks in use. If airborne mists or vapours are generated, use local exhaust ventilation controls. Assess exposure and use any additional measures to keep airborne levels below any relevant exposure limit.

Where necessary, seek additional occupational hygiene advice.

Not to eat, drink and smoke in work areas.

Avoid contact with skin and eyes. To wash hands after use and to remove contaminated clothing and protective equipment before entering eating areas.

7.2. Conditions for safe storage, including any incompatibilities**Advices on specific storage to manage risks associated with:**

- | | |
|---|--|
| i) Explosive atmospheres | : Non-relevant risk. Keep container tightly closed in a dry and well-ventilated place. |
| ii) Corrosive conditions | : Non-relevant risk. |
| iii) Flammability hazards | : Non-relevant risk. |
| iv) Incompatible substances or mixtures | : Non-relevant risk if the product is maintained in its closed containers. |
| v) Evaporative conditions | : Non-relevant risk. |
| vi) Potential ignition sources | : Non-relevant risk. at room temperature (<40°C). When containers are opened, keep away from heat sources and electrical sparks. |

Advices on how to control the effects of:

- | | |
|-----------------------|-------------------------|
| i) Weather conditions | : Non-relevant effects. |
|-----------------------|-------------------------|

- ii) Ambient pressure : Non-relevant effects.
- iii) Temperature : Non-relevant effects. However height temperature derived from fires can produce decomposition in toxic gases. Store in cool and dry place.
- iv) Sunlight : Non-relevant effects.
- v) Humidity : Non-relevant effects if the product is maintained in its closed containers.
- vi) Vibration : Non-relevant effects.

Stabilizers and antioxidants are not required to maintain the integrity of the substance.

Other advices:

- i) Areas where product be handled must be well ventilated.
- ii) Quantity limits under storage conditions: Non limited quantity. It depends from warehouse conditions according to the legal requirements.
- iii) Packaging compatibilities: Stanley-steel or coextruded high density polyethylene multilayer containers are recommended for packaging.

7.3. Specific end use(s)

Agrochemical product for herbicide use in the crops protection. Professional use.

All crop protection preparations put in the Union European market must be approved by the competent authorities and detailed labels are established for each case, including use and safety indications. Before to use, final users (farmers) must read carefully these packaging labels.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

No national (Spain) biological limit value has been established for this product.

Components	Exposure limit(s)	Value type	Notes
Clodinafop-propargyl	0,1 mg/m ³	8 h TWA	
Cloquintocet-mexyl	10 mg/m ³	8 h TWA	
Solvent naphta (petroleum)	15 ppm or 52 mg/m ³	8 h TWA	

8.2. Exposure controls

8.2.1. Appropriate engineering control

Monitoring plan should be established by an expert in occupational hazards, according to frequency, exposure time and prevention measures (ventilation, personal protection equipment, values obtained in previous controls, etc.).

8.2.2. Personal protective equipment

Workers in manufacturing facilities should use the following Personal Protective Equipment. Applicators must follow instructions on the packaging label.

Protective measures: The use of technical measures should always have priority over the use of personal protective equipment.

When select personal protective equipment, seek appropriate professional advice. Personal protective equipment should be certified to appropriate standards. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

- J Eye/face protection: Safety glasses with side-shields. Where contact with the liquid is likely, chemical goggles are recommended. Use equipment for eye protection tested and approved under appropriate government standards.
- J Skin protection:
 - Hand protection: Handle with gloves for chemical products. Gloves of Neoprene; Nitrile/butadiene rubber ("nitrile" or "NBR"); Ethyl vinyl alcohol laminate("EVAL"). Polyvinyl chloride ("PVC" or "vinyl") must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
 - Others: Work clothes (long-sleeved shirt, long pants).
- J Respiratory protection: For most conditions, no respiratory protection should be necessary. However, when airborne exposure guidelines and/or comfort levels may be exceeded use an approved air-purifying respirator (combination gas, vapour and particulate filter). Use a self-contained breathing apparatus in cases of emergency spills, when exposure levels are unknown, or under any circumstances where air-purifying respirators may not provide adequate protection.
- J Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

8.2.3. Environmental exposure controls

Rooms where product be handled must be well ventilated (natural or forced ventilation). Avoid formation of dust, mist and/or vapour.

9. PHYSICAL AND CHEMICAL PROPERTIES**9.1 Information on basic physical and chemical properties**

Appearance	
Form	: Liquid.
Color	: dark yellow
Odour	: characteristic
Odour threshold	: no data available
pH	: 4,5 (1% w/v aqueous dispersion)
Melting point	: not applicable
Boiling point	: not applicable
Flash point	: 68°C
Evaporation rate	: no data available
Flammability (solid)	: not applicable (liquid)
Explosive limits	: not applicable (mixture)
Vapour pressure	: no data available
Vapour density	: no data available
Relative density	: 0,9611 at 20°C
Solubility(ies)	: Not soluble in water but miscible; it forms stable emulsions with water at a wide rate of concentrations.
Partition coefficient	: not applicable (mixture)
Auto-ignition temperature	: 456,5 ± 9,2°C at 760,4 mm Hg
Decomposition temperature	: not applicable
Viscosity	: Dynamic viscosity: 2,84 cPs at 20°C; 2,60 cPs at 40°C Kinematic viscosity: 2,96 cSt at 20°C; 2,71 cSt at 40°C
Explosive properties	: non-explosive properties
Oxidizing properties	: non-oxidizing properties

9.2. Other information.

No other properties which are influence in safety are known.

10. STABILITY AND REACTIVITY

10.1. Reactivity	: Stable mixture; non hazardous properties derived of its reactivity are expected according to the molecular structure of its ingredients.
10.2. Chemical stability	: Stable mixture under normal conditions. Physically and chemically stable for at least 2 years when stored in the original unopened sales container at room temperatures (10-35°C).
10.3. Possibility of hazardous reactions	: No hazardous reactions are known.
10.4. Conditions to avoid	: Extreme temperatures (<5°; >40°C), sunlight.
10.5. Incompatible materials	: Strong bases an acids can decompose the product giving other more toxic substances; strong oxidizing agents react with organic substances liberating excessive heat and other toxic substances.
10.6. Hazardous decomposition products	: Hazardous combustion products formed under fire conditions: carbon oxides (COx) and nitrogen oxides (NOx), hydrogen chloride (HCl) and hydrogen fluoride (HF).

11. TOXICOLOGICAL INFORMATION

Acute toxicity	: Not classified as acute toxicant according to criteria from Regulation (EC) 1272/2008 (CLP)
LD50 Oral – rat	: 5000 mg/kg bw (preparation)
LD50 Dermal – rat	: >2000 mg/kg bw (preparation)
LC50 Inhalation – rat (4 h)	: > 5,31 mg/L air (max. achievable conc.) (preparation)
Skin corrosion/irritation	: Not classified as according to criteria from Regulation (EC) 1272/2008 (or CLP) Mildly irritant (GHS Cat.3) (preparation)
Serious eye damage/eye irritation	: Eye Irrit, category 2 (CLP): H319 Causes serious eye irritation; Irritating to eyes (GHS Cat. 2A) (preparation).
Respiratory or skin sensitization	: Skin Sens. 1: Skin Sensitize, category 1(CLP) H317 May cause an allergic skin reaction; Sensitizer (GHS Cat. 1B) (preparation)
Germ cell mutagenicity	: Not classified due to this hazard according to CLP criteria.
Carcinogenicity	: Not classified due to this hazard according to CLP criteria.

Reproductive toxicity	: Not classified due to this hazard according to CLP criteria.
STOT - RE	: Not classified due to this hazard according to CLP criteria. A repetitive exposure to clodinafop-propargyl may cause anemia.
Aspiration hazard	: Aspiration toxicity, category 1. Contains solvent naphtha: Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary oedema.
Other information	: NDA

12. ECOLOGIC INFORMATION

Unless otherwise specified (preparation), all data in this section correspond to active ingredient Clodinafop propargyl

12.1. Toxicity	: Classified as Aquatic Chronic 2: Aquatic chronic toxicity, category 2 (CLP) H411 Toxic to aquatic life with long lasting effects.	
Aquatic organisms:		
Toxicity in fish		
Fish - Acute LC50 - 96 h	: 0,21 mg/l <i>Lepomis macrochirus</i> (bluegill)	
Fish- chronic NOEC -28 days	: 0,10 mg/L <i>Lepomis macrochirus</i> (bluegill)	
Toxicity to <i>daphnia</i> and other aquatic invertebrates.		
Acute IC50- 48 h	: 62,3 mg/l <i>Daphnia magna</i> (water flea) (preparation)	
Chronic -21 days NOEC	: 0,23 mg/l <i>Daphnia magna</i>	
Toxicity in algae and aquatic plants		
EC ₅₀ (acute 72 h)	: <i>Pseudokirchneriella.subcapitata</i> : E _b C ₅₀ >100 mg/l; E _r C ₅₀ >100 mg/l (preparation)	
Toxicity in higher plants		
EC ₅₀ (7 days) fronds biomass	: >1,4 mg/l <i>Lemna gibba</i>	
Terrestrial organisms		
Acute toxicity – LC50 2 weeks	: 197 mg/kg dry soil (Earthworm - <i>Eisenia foetida</i>)	Moderate
Effects on honeybees		
Acute oral toxicity LD50 (48 h)	: >93,7 µg/bee	
Effects on other arthropod species		
<i>Aphidius rhopalosiphii</i>	: LR50 = 3,1 g/ha (48 hour)	– Harmful at 1 kg/ha
<i>Typhlodromus pyri</i>	: LR50 = 20 g/ha (7 day)	– Harmful at 1 kg/ha
Effects on birds		
Acute oral toxicity LD50 rat	: 1363 mg/kg <i>Colinus virginianus</i> (bobwhite quail)	
Short-term LD50/LC50	: >980 mg/kg bw/day (<i>Colinus virginianus</i>) - bobwhite quail	
Effect on mammals		
Acute oral toxicity LD50	: 5000 mg/kg bw (preparation)	
12.2. Persistence and degradability		
Soil degradation (aerobic) DT50 (typical)	: 0,8 days	Non-persistent
DT50 (lab at 20°C)	: 0.8 days	Non-persistent
DT90 (lab at 20°C)	: 2,5 days	
Aqueous photolysis (20°C) pH 7- DT50	: 24 days	Slow
Aqueous hydrolysis 20°C, pH (5-7-9) - DT50	: 4,87 days (pH 7)	Non- persistent.
	(17,0 d at pH 4 26,8 d at pH 5 and 0.07 d at pH 9).	
12.3. Bioaccumulative potential	: Low (calculated)	
Octanol-water partition coefficient, K _{ow}	: logPow= 3,9 (20°C; pH 7)	
Bio-concentration factor (BCF)	: 34 (trigger for BCF: 100)- Low potential .	
12.4. Mobility in soil		
Freundlich isothermconstant	: Sorption coefficient K _f = 88,4	
	Affinity K _{foc} = 1466	Slightly mobile
GUS leaching potential index (calculated)	: -0,08 (calculated)	Low leachability.
	This parameter is an indicator and given here to provide a general indication of hazard only.	
12.5. PBT and vPvB assessment	: no required (according to available data of BCF and K _{ow})	
12.6. Other adverse effects	: unknown	

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable product to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Do not contaminate ponds, waterways or ditches with chemical or used container. Do not

dispose of waste into sewer. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations.

Contaminated packaging

Empty remaining contents. Triple rinse containers. Empty containers should be taken for local recycling or waste disposal in accordance with applicable regulations. Do not re-use empty containers. The preferred options are to send to licensed declaimer or permitted incinerator.

Information relevant for the safety of persons conducting waste management activities

Apply in every case the necessary protection equipment. See information given in Section 8 of this safety data sheet.

14. TRANSPORT INFORMATION

UN Number : UN 3082
Transport designation : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(clodinafop-propargyl in solution).

ADR/RID/ADN (European Agreement concerning the International Carriage of Dangerous Goods by Road/ Regulation concerning the International Carriage of Dangerous Goods by Rail / European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)

Class ADR/RID/ADN	: 9	H.I. Number	: 90
Classification code	: M6	Transport category	: 3
Packaging group	: III	Tunnel restriction code	: (E) - only for ADR
Marking and labelling	: Class 9 hazard label + Environmentally hazardous mark		

IMDG-Code (International Maritime Dangerous Goods Code)

Class ADR/RID/ADN	: 9	Packaging group	: III
Marine pollutant	: YES		
Marking and labelling	: Class 9 hazard label + Environmentally hazardous mark		

Transport in bulk according to Annex II : Not applicable. Product is not transported in bulk of MARPOL 73/78 and IBC Code:

IATA-ICAO (Technical Instructions for the Safe Transport of Dangerous Goods by Air)

IATA-ICAO Class	: 9	Packaging group	: III
Marking and labelling	: Class 9 hazard label + Environmentally hazardous mark		

15. REGULATORY INFORMATION

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

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

REGULATION (EC) No 1107/2009 of the European Parliament and of the Council of 21 October 2009 concerning the placing of plant protection products on the market and repealing Council Directives 79/117/EEC and 91/414/EEC

REGULATION (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

REGULATION (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning 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

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)

15.2. Chemical safety assessment

Not required. Active substances and the usual formulations have been assessed and approved by EFSA, according to the current regulation.

16. OTHER INFORMATION

- Changes to the previous version:
Form changes.
Changes for adapting to regulation (UE) 2015/830.

Other correction of mistakes, mainly in Section 14: transport designation.
 Changed paragraphs are marked with a vertical line on its left margin.

b) Key or legend to abbreviations and acronyms used in this safety data sheet.

ADI	: acceptable daily intake	IMDG-Code	: International Maritime Dangerous Goods Code
ADR	: European Agreement concerning the International Carriage of Dangerous Goods by Road	IC50	: median immobilization concentration
a.i.	: active ingredient	LC50	: median lethal concentration
AOEL	: acceptable operator exposure level	LD50	: median: lethal dose,; <i>dosís letalis media</i>
ARfD	: acute reference dose	LR50	: lethal rate, median
BCF	: Bio-concentration factor	LEL	: lower explosion limit
BEI	: Biological exposure index.	NDA	: no data available
b.w.	: body weight	NOAEC	: no observed adverse effect concentration
CL	: concentration limit	NOAEL	: no observed adverse effect level
DNEL	: Derived No Effect Level	NOEC	: no observed effect concentration
EAC	: Environmentally Acceptable Concentration	OECD	: Organization for Economic Cooperation and Development
ECHA	: European Chemical Agency	OEL	: Observed Effects Level
EC50	: median effective concentration	PBT	: persistent, bio-accumulative and toxic
Ebc50	: median effective concentration (biomass)	RTECS	: registry of toxic effects of chemical substances (USA)
ErC50	: median effective concentration (growth rate)	SCL	: specific concentration limit
ED50	: median effective dose	STOT-RE	: specific target organ toxicity-repeated exposure
EFSA	: European Food Safety Authority	STOT-SE	: specific target organ toxicity-single exposure
DT50	: period required for 50 percent dissipation	TG	: Technical grade
GHS	: Global Harmonized System (for labeling)	TLV-STEL	: Threshold limit value – Short time exposure level
IATA	: International Aerial Transport Association.	TLV-TWA	: threshold limit value – time weighted average
ICAO	: International Civil Aviation Organization.	UEL	: upper explosion limit
		vPvB	: very persistent and very bio-accumulative

c) Key literature references and sources for data

EFSA Scientific Report (2005) 34, 1-78. Conclusion on the peer review of clodinafop
 The FOOTPRINT Pesticide Properties Data Base. <http://www.eu-footprint.org/ppdb.html>
 ECHA. Registered substances data base <http://apps.echa.europa.eu/registered/registered-sub.aspx#search>

d) This formulated product was tested according to the established methods and approved by European Union Authority. Classification according to register MAPP 17151 awarded from CRD (HSD –UK).

e) List of classification codes and hazards statements presented in this data sheet.

According to Regulation (EC) No1272/2008

Acute Tox 4	Acute toxicity (category 4).	H302	Harmful if swallowed.
Asp. Tox. 1	Aspiration toxicity (category 1).	H304	May be fatal if swallowed and enters airways.
Acute Tox 4	Acute toxicity (category 4).	H332	Harmful if inhaled.
Skin Sens. 1	Skin sensitizer (category 1).	H317	May cause an allergic skin reaction.
Eye Dam. 1	Serious damage to eyes (category 1).	H318	Causes serious eye damage.
Eye Irrit. 2A	Eye irritant (category 2A).	H319	Causes serious eye irritation.
STOT SE 3	STOT single exposure (category 3).	H335	May cause respiratory irritation.
STOT SE 3	STOT single exposure (category 3).	H336	May cause drowsiness or dizziness.
STOT RE 2	STOT repeated exposure (category 2)	H373	May cause damage to organs through prolonged exposure.
Aq. Acute 1	Aquatic acute toxicity (category 1)	H400	Very toxic to aquatic life
Aq. Chronic 1	Aquatic chronic toxicity (category 1)	H410	Very toxic to aquatic life with long lasting effects.
Aq. Chronic 2	Aquatic chronic toxicity (category 2)	H411	Toxic to aquatic life with long lasting effects.
Aq. Chronic 3	Aquatic chronic toxicity (category 3)	H412	Harmful to aquatic life with long lasting effects
		EUH066	Repeated exposure may cause skin dryness or cracking.

f) Advice on any training appropriate for workers (health and environment protection)

Training in handling chemicals. Training in the choice and use of personal protective clothing. Training on first aid to other workers and themselves (e.g. Use of showers and eyewash; artificial respiration, healing of minor injuries, etc.); Training for emergency intervention including the use of fire extinguishers and other firefighting media. Training also should include drains protection in order to avoid the washing or firefighting water contaminates surface or underground water or enters in public drainage.

Note

The information in this document is based on the present state of our knowledge and it is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the product. PROPLAN PLANT PROTECTION COMPANY, S.L. shall not be held liable for any damage resulting from handling or from contact with the above product.