

# RONSTAR<sup>®</sup> LIQUID

MAPP 11215

An emulsifiable concentrate containing 250g/l (25.5% w/w) oxadiazon for use as an residual and contact herbicide for control of bindweed and annual weeds

## Herbicide

- Apples ●
- Blackcurrants ●
- Gooseberries ●
- Grape vines ●
- Hops ●
- Ornamental shrubs ●
- Ornamental trees ●
- Pears ●
- Raspberries ●

Marketing company:

# CERTIS

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24 hour emergency cover – phone 01980 676500 and follow instructions on the answer machine outside of office hours.

® Ronstar is a registered trademark of Bayer CropScience

ALWAYS READ THE LABEL

USE PESTICIDES SAFELY

RL/A5/03.04

# CERTIS

## GENERAL INFORMATION

Ronstar Liquid is an emulsifiable concentrate containing 25% oxadiazon and is a residual and contact herbicide. It is recommended for use in apples, pears, blackcurrants, gooseberries, raspberries, established hops, ornamental trees and shrubs and grape vines grown outdoors. Ronstar Liquid is a pre and post-emergence herbicide which is particularly active against all bindweeds and many annual broad-leaved weeds, including those such as knotgrass.

Ronstar Liquid is supplied in 1 litre bottles in outers of 12.

## DIRECTIONS FOR USE - ALL CROPS

**Preparation:** Add the required amount of Ronstar Liquid to clean water in the sprayer. Ensure thorough mixing before spraying.

**Application rates:** Apply 4 or 8 l/ha in 300-1000 litres of water per hectare – see table. Use the higher volume where weed infestation is already dense. Complete wetting of weed foliage is essential.

**Spot treatment:** Use a dilution rate of 100ml Ronstar Liquid in 10 litres of water.

Use as a directed spray to the bare ground or young weeds, avoiding the foliage of trees, bushes, etc. For spot treatment, the maximum concentration must not exceed 100 ml/10 litres.

**Caution:** The new young leaves and shoots of all plants are particularly susceptible to damage. If treatment is made during the growing season (see crop timing recommendations), young foliage must be avoided.

## CROPS – Timing

**Hops:** Treat in February, well before emergence of the hop shoots. Alternatively, treat in June/July after de-leafing. Do not spray hop sets. Do not spray young hops until after the second year of cropping. Avoid overlapping of spray bouts over the hills.

**Apples and pears:** Treat up to early Summer (January to July) avoiding young leaves and shoots.

**Blackcurrants and gooseberries:** Treat from January to bud-break under bush row bands. Bushes must not be sprayed. In blackcurrants, where there are very heavy infestations of weeds, particularly of bindweed, a 'follow up' application of Tropolox may be made post-picking.

**Raspberries:** Treat from April to June before crop flowering, applying in alleys and between cane rows as a direct spray to avoid young and emerging canes.

**Ornamental trees and shrubs:** Treat from January to June avoiding young leaves and shoots. Container-grown plants should not be sprayed overall. The 'standing-out' ground may be treated before stocking with containers.

**Outdoor grape vines:** Treat in February/March, well before the emergence of young growth. Alternatively, treat in June/July providing young foliage can be avoided.

## Soil and climate:

1. Ronstar Liquid is active in moist soil conditions and persists throughout most of the season (at least 4-6 months). Irrigation will give optimum activity. In dry soil, pre-emergence activity of Ronstar Liquid will be reduced, particularly on perennial broad-leaved weeds. Ronstar Liquid is reactivated when moisture returns.

2. Where the soil organic matter content is greater than 10%, e.g. where mulches have been applied or where a mat of organic matter has built up, for instance, under blackcurrant bushes, pre-emergence activity will be reduced. In these conditions post-emergence treatment is most effective.

3. Do not cultivate soil after treatment.

## Subsequent cropping:

Where sites treated with Ronstar Liquid are cleared or grubbed a period of at least 6 months should elapse between treatment and the sowing or planting of subsequent crops. In addition the soil should be ploughed or dug afterwards in order to remove any risk of damaging subsequent crops. In mixtures with simazine and Gramoxone 100, refer to manufacturer's recommendations.

## Maximum total dose:

A maximum of 8 l/ha may be applied in any 12 month period.

## WEEDS CONTROLLED AND APPLICATION RATES

Perennial broad-leaved weeds	Weed growth stage (also see crop timings)	Dose
Field bindweed, hedge or large bindweed (Bellbine)	Pre-emergence or post emergence. Best control will be achieved when the first shoots are 10-15 cm long	8 l/ha
Annual weeds	Dose and timing	
	4 l/ha	8 l/ha
	Pre-emergence only	Pre-emergence and up to the young plant stage
Black bindweed	Susceptible	*
Charlock	Susceptible	Susceptible
Cleavers	Susceptible	*
Corn spurrey	Susceptible	*
Fat hen	Susceptible	Susceptible
Groundsel	Susceptible	Susceptible
Knotgrass	Susceptible	Susceptible
Mayweeds	Susceptible	*
Red deadnettle	Susceptible	Susceptible
Redshank	Susceptible	*
Runch (wild radish)	Susceptible	*
Shepherd's purse	Susceptible	Susceptible
Small nettle	Susceptible	Susceptible
Sowthistles	Susceptible	Susceptible
Speedwells	Susceptible	Moderately susceptible
Sun spurge	Susceptible	*
Annual meadow grass	Apply at 8 l/ha	Not recommended for post-emergence application

\* Not evaluated post-emergence.

## TANK MIX RECOMMENDATIONS AND WEEDS CONTROLLED

Weeds	Weed growth stage (also see crop timings)	Dose
All listed weeds, plus improved persistency of control of seedlings and germination of most annual weeds	Pre-emergence only	Ronstar Liquid at 4.0 l/ha plus Gesatop (simazine**) at 1.1kg active ingredient per hectare.

Annual meadow-grass is controlled by Ronstar Liquid at 8.0 l/ha pre-emergence only.

\*\*The tank mix with simazine must only be used on lighter soils (sandy loam to silt loam).

THE (COSHH) CONTROL OF SUBSTANCES HAZARDOUS TO HEALTH REGULATIONS MAY APPLY TO THE USE OF THIS PRODUCT AT WORK.

## SAFETY PRECAUTIONS

### Operator protection

\*Engineering control of operator exposure must be used where reasonably practicable in addition to the following personal protective equipment:

\*WEAR SUITABLE PROTECTIVE GLOVES† AND FACE PROTECTION (FACESHIELD) when handling the concentrate.

†Synthetic rubber gloves (neoprene or nitrile) preferably of a minimum thickness of 0.5 mm.

\*However, engineering controls may replace personal protective equipment if a COSHH assessment shows that they provide an equal or higher standard of protection.

WHEN USING DO NOT EAT, DRINK OR SMOKE.

WASH CONCENTRATE from skin or eyes immediately.

AVOID ALL CONTACT WITH SKIN AND EYES.

WASH HANDS before meals and after work.

### Environmental protection

\*Do not contaminate surface waters or ditches with chemical or used container.

### Storage and disposal

KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDINGSTUFFS.

KEEP OUT OF REACH OF CHILDREN.

KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe place.

WASH OUT CONTAINER THOROUGHLY and dispose of safely.

COMPLIANCE WITH THE FOLLOWING CONDITIONS OF USE AND ALL SAFETY PRECAUTIONS MARKED \* IS A LEGAL REQUIREMENT

FOR USE ONLY AS AN HORTICULTURAL HERBICIDE

For use on (crops or situations):

Maximum individual dose:

Maximum number of treatments:

Latest time of application:

Details are given under 'Directions for use'

READ ALL OTHER SAFETY PRECAUTIONS AND DIRECTIONS FOR USE BEFORE USE

## RONSTAR LIQUID



HARMFUL

FLAMMABLE

IRRITATING TO EYES AND SKIN



DANGEROUS TO THE ENVIRONMENT

VERY TOXIC TO AQUATIC ORGANISMS, MAY CAUSE LONG TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT

HARMFUL: MAY CAUSE LUNG DAMAGE IF SWALLOWED

VAPOURS MAY CAUSE DROWSINESS AND DIZZINESS

This material and its container must be disposed of in a safe way.

Use appropriate containment to avoid environmental contamination.

If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

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

Section 6 of the Health and Safety at Work Act

Additional Product Safety Information

(This section does not form part of the product label under the Control of Pesticide Regulations 1986).

The product label provides a information on a specific pesticidal use of the product; do not use otherwise, unless you have assessed any potential hazard involved, the safety measures required and that particular use has "off-label" approval or is otherwise permitted under the Control of Pesticide Regulations. The information on this label is based on the best available information including data from test results.

Safety Data Sheet

1. Substance/preparation and company name

Ronstar Liquid

**Use of substance/preparation**

Horticultural herbicide

**Company identification**

Certis

1b Mills Way, Boscombe Down Business Park, Amesbury, Wiltshire SP4 7RX  
Telephone: 01980 676500 Fax: 01980 626555

2. Composition/information on ingredients

**Hazardous components**

Chemical name	Concentration (%)	CAS	Symbol	R phrases
Oxadiazon	25.40	19666-30-9	N	R50/53
Calcium alkylarylsulfonate	>1.00 - <5.00		Xi	R36/38
Iso-butanol	>1.00 - <5.00	78-83-1	Xi	R10 R37/38 R41 R67
Cyclohexanone	>5.00 - <25.00	108-94-1	Xn	R10 R20 R65 R66 R67 R51/53
Solvent naphtha (petroleum), heavy arom.	>25.00 - <50.00		Xn, N	R65 R66 R67 R51/53

3. Possible hazards

Flammable.

Irritating to eyes and skin.

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Harmful:** may cause lung damage if swallowed.

Vapours may cause drowsiness and dizziness.

4. First aid measures

**General advice:** Remove contaminated, soaked clothing immediately and dispose of safely.

**Inhalation:** Move the patient to fresh air and keep at rest. If symptoms persist, call a physician.

**Skin contact:** Wash off immediately with soap and plenty of water. Seek medical advice if at all worried.

**Eye contact:** In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

**Ingestion:** Do not induce vomiting. Wash out mouth with water. Keep at rest. Obtain medical attention.

**Notes to physician**

**Symptoms:** Local: May cause skin and eye irritation.

**Symptoms:** Systemic: To date no symptoms are known.

**Risks:** Risk of product entering the lungs on vomiting after ingestion.

**Treatment:** Local treatment: Initial treatment should be symptomatic and supportive.

**Treatment:** Systemic treatment: Initial treatment should be symptomatic and supportive.

5. Fire fighting measures

**Suitable extinguishing media:** Water spray, alcohol-resistant foam, dry powder, carbon dioxide (CO<sub>2</sub>)

**Extinguishing media which must not be used for safety reasons:** High volume water jet.

**Specific hazards during fire fighting:** In case of fire the evolution of dangerous gases is possible.

**Special protective equipment for fire-fighters:** In the event of fire and/or explosion do not breathe fumes. Wear self contained breathing apparatus for fire-fighting if necessary.

**Further information:** Remove product from areas of fire, or otherwise cool containers with water in order to avoid pressure being built up due to heat. Whenever possible, contain fire-fighting water by bunding area with sand or earth.

**Methods for cleaning up:** Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Transfer collected material to heavy duty plastic drums and keep safe for disposal. Clean contaminated floors and objects thoroughly with water and detergents, observing environmental regulations.

**Additional advice:** Information regarding safe handling, see Section 7. Information regarding personal protective equipment, see Section 8. Information regarding waste disposal, see Section 13. Check also for any local site procedures.

6. Accidental release measures

**Personal precautions:** Avoid contact with spilled product or contaminated surfaces. When dealing with a spillage, do not eat, drink or smoke.

**Environmental precautions:** Keep people and animals away. Do not discharge into the drains/ surface water/ groundwater. If spillage enters drains leading to sewage works inform local water company immediately. If spillage enters rivers or watercourses, inform the Environment Agency (emergency telephone number 0800 807060).

**Methods for cleaning up:** Vacuum up spilled product. Transfer collected material to heavy duty plastic drums and keep safe for disposal. Clean contaminated floors and objects thoroughly, observing environmental regulations.

**Additional advice:** Information regarding safe handling, see Section 7. Information regarding personal protective equipment, see Section 8. Information regarding waste disposal, see Section 13. Check also for any local site procedures.

7. Handling and storage

**Handling:**

**Advice on safe handling:** No specific precautions required when handling unopened packs/ containers; follow relevant manual handling advice. Provide good ventilation of working area (local exhaust ventilation if necessary).

**Advice on protection against fire and explosion:** The product is flammable. Keep away from sources of ignition - No smoking. Vapours may form explosive mixture with air.

**Storage:**

**Requirements for storage areas and containers:** Keep containers tightly closed in a cool, well-ventilated place. Store in a place accessible by authorised persons only.

**Further information:** Keep away from direct sunlight. Protect against frost.

**Advice on common storage:** Keep away from food, drink and animal feedingsuffs.

**Storage temperature:** 0-30°C

**Suitable materials:** Keep in original packaging, tightly closed.

8. Exposure controls/personal protection

Refer to COSHH assessment (Control of Substances Hazardous to Health Regulations 1999 as amended). Engineering controls should be used in preference to personal protective equipment wherever practicable.

**Components with workplace control parameters**

Components	CAS No	Control parameters	Update	Basis
Iso-butanol	78-83-1	154 mg/m <sup>3</sup> (TWA)	2001	EH40 OES
		231 mg/m <sup>3</sup> (STEL)	2001	EH40 OES
Cyclohexanone	108-94-1	102 mg/m <sup>3</sup> (TWA)	2001	EH40 OES
		408 mg/m <sup>3</sup> (STEL)	2001	EH40 OES
		40.8 mg/m <sup>3</sup> (TWA)	05/2001	EU ELV
		81.6 mg/m <sup>3</sup> (STEL)	05/2001	EU ELV

**Personal protective equipment**

**Respiratory protection:** Short term: filter apparatus, Filter A.

**Hand protection:** Chemical resistant gloves, PVC gloves, nitrile gloves.

**Eye protection:** Chemical resistant goggles must be worn.

**Skin and body protection:** Light protective clothing, PVC. PVC boots.

**Hygiene measures:** When using, do not eat, drink or smoke. Remove soiled clothing immediately. Remove soaked clothing immediately. Clean hands and face at work intervals and after work. Work in adequately ventilated room.

## 9. Physical and chemical properties

Appearance:	Liquid
Characteristics:	Brown, clear
Flash point:	55°C; method: closed cup
Ignition temperature:	>450°C; note: the data relate to the solvent
Autoignition temperature:	430°C
Upper explosion limit:	7.00% (V); note: the data relate to the solvent
Lower explosion limit:	0.8% (V); note: the data relate to the solvent
Vapour pressure:	0.3 hPa at 20°C; note: the data relate to the solvent
Relative vapour density:	1.00
Density:	ca. 0.99 g/cm <sup>3</sup> at 20°C
Water solubility:	Note: miscible
Partition coefficient (n-octanol/ water):	log Pow: 5.33; note: the value mentioned relates to the active ingredient oxadiazon
Viscosity, kinematic:	2.89 mm <sup>2</sup> /s at 40°C
Surface tension:	22 mN/m at 40°C
Other information:	The product is flammable

## 10. Stability and reactivity

**Conditions to avoid:** Extremes of temperature and direct sunlight.

**Materials to avoid:** None.

**Hazardous reactions:** No hazardous reactions when stored and handled according to prescribed instructions.  
Note: stable under recommended storage conditions.

## 11. Toxicological information

Acute oral toxicity:	LD50 (rat) >2000 mg/kg
Acute inhalation toxicity:	LC50 (rat) >5.04 mg/l Exposure time: 4h
Acute dermal toxicity:	LD50 (rat) >2000 mg/kg
Skin irritation:	Rabbit Result: Irritating to skin
Eye irritation:	Rabbit Result: Irritating to eyes
Sensitization:	Buehler Test guinea pig Result: Non-sensitizing

## 12. Ecological information

### Elimination information

Bioaccumulation:	Bluegill sunfish Bioconcentration factor (BCF): 1,111 Test substance: the value mentioned relates to the active ingredient oxadiazon
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### Ecotoxicity effects:

Toxicity to fish:	LC50: 1.5 mg/l <i>Cyprinodon variegatus</i> (sheepshead minnow) Exposure time: 96h Test substance: the value mentioned relates to the active ingredient oxadiazon
Toxicity to fish:	LC50: 1.2 mg/l Bluegill sunfish Exposure time: 96h Test substance: the value mentioned relates to the active ingredient oxadiazon
Toxicity to fish:	LC50: 1.2 mg/l Rainbow trout Exposure time: 96h Test substance: the value mentioned relates to the active ingredient oxadiazon

Toxicity to daphnia:	EC50: >2.4 mg/l Water flea ( <i>Daphnia magna</i> ) Exposure time: 48h Test substance: the value mentioned relates to the active ingredient oxadiazon
Toxicity to algae:	EC50: 0.028 mg/l Algae Exposure time: 72h
Toxicity to other organisms:	LD50: >2150 mg/kg Bobwhite quail Test substance: the value mentioned relates to the active ingredient oxadiazon
Toxicity to other organisms:	LD50: 1040 mg/kg Mallard duck Test substance: the value mentioned relates to the active ingredient oxadiazon

## 13. Disposal considerations

**Product:** In accordance with current regulations may be taken to waste disposal site or incineration plant, after consultation with site operator and/or with the responsible authority. Can be landfilled or incinerated, when in compliance with local regulations. Advice may be obtained from the local waste regulation authority (part of the Environment Agency in the UK).

**Contaminated packaging:** Packaging that cannot be cleaned should be disposed of as product waste. Empty containers can be landfilled, when in compliance with the Environmental Protection (Duty of Care) Regulations 1991.

## 14. Transport information

### ADR/RID

UN no:	1993
Class:	3
Packing group:	III
Hazard no:	30
Description of the goods:	1993 FLAMMABLE LIQUID, N.O.S. (non viscous) (CYCLOHEXANONE)

### ADNR

UN no:	1993
Class:	3
Item:	5
Letter:	c
Description of the goods:	1993 Flammable liquid, n.o.s. (CYCLOHEXANONE)

### IMDG

UN no:	1993
Class:	3
Packing group:	III
EmS:	3-07
Marine pollutant:	P
Description of the goods:	FLAMMABLE LIQUID, N.O.S. (non viscous) (OXADIAZON 25.4% /CYCLOHEXANONE)

### IATA

UN no:	1993
Class:	3
Packing group:	III
Description of the goods:	Flammable liquid, n.o.s. (OXADIAZON 25.4%/CYCLOHEXANONE)

### CDG CPL

UN no:	1993
Class:	3
Packing group:	III
Hazard identification no:	30
Emergency action code:	3Y
Proper shipping name:	FLAMMABLE LIQUID, N.O.S. (CYCLOHEXANONE)

## 15. Regulatory information

This product has been classified in accordance with the Chemicals (Hazard Information and Packaging for Supply) Regulations 2002: CHIP 3

Hazardous components which must be listed on the label:

Oxadiazon

Solvent naphtha (petroleum), heavy arom.

Exceptional labelling of special preparations: Restricted to professional users. To avoid risks to man and the environment, comply with the instructions for use.

Symbols:	Xn Harmful N Dangerous for the environment
Risk phrases:	R10 Flammable R36/38 Irritating to eyes and skin R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment R65 Harmful: may cause lung damage if swallowed R67 Vapours may cause drowsiness and dizziness
Safety phrases:	S35 This material and its container must be disposed of in a safe way S57 Use appropriate containment to avoid environmental contamination S62 If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

## 16. Other information

Text of R phrases mentioned in Section 2:

R10 Flammable

R20 Harmful by inhalation

R36/38 Irritating to eyes and skin

R37/38 Irritating to respiratory system and skin

R41 Risk of serious damage to eyes

R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

R65 Harmful: may cause lung damage if swallowed

R66 Repeated exposure may cause drowsiness and dizziness

R67 Vapours may cause drowsiness and dizziness

## Disclaimer

The above information is intended to give general health and safety guidance on the storage and transport of the substance or product to which it relates. It is not intended to apply to the use of the substance or product for which purposes the substance or product label and any appropriate technical usage literature available should be consulted and any relevant licences, consents or approvals complied with. The requirements or recommendations of any relevant site or working procedure, system or policy in force or arising from any risk assessment involving the substance or product should take precedence over any of the guidance contained in this safety data sheet where there is a difference in the information given. The information provided in this safety data sheet is accurate at the date of publication and will be updated as and when appropriate. No liability will be accepted for any injury loss or damage resulting from any failure to take account of information or advice contained in this safety data sheet.