

# REACT 100 EC

# SAFETY DATA SHEET

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** REACT 100 EC  
**Other identifier:** Novaluron 100 EC  
**Recommended use:** Insecticide  
**Restrictions on use:** Agriculture

**Supplier:** Villa Crop Protection (Pty) Ltd.  
**Co. Reg. No.:** 1992/002474/07  
PO Box 10413  
Aston Manor, 1630, South Africa

**Telephone:** (011) 396 2233  
**Fax:** (011) 396 4666  
**Website:** [www.villacrop.co.za](http://www.villacrop.co.za)

**Emergency telephone numbers:**  
**24 Hr Transport / Spill emergency no:**  
(Hazcall24) +27 86 044 4411  
(Client: Villa Crop Protection)  
Griffon Poison Information Centre +27 82 446 8946  
(Client: Villa Crop Protection)  
**Poisoning Emergency telephone numbers:**  
Griffon Poison Information Centre +27 82 446 8946  
Poisons Information Centre +27 861 555 777

## 2. HAZARDS IDENTIFICATION

UN GHS, Regulation EC 1272/2008 [EU-GHS/CLP] EU & SANS 10234:2008		
Hazard classes	Hazard categories	H-statements
<b>Health</b>		
Oral	Acute Tox. 5	H303
Dermal	Skin Corr. 1B	H314
Eye	Eye Irrit. 2	H319
Specific Target Organ Toxicity	STOT SE 3	H335
Reproductive	Repr. 1B	H 360d
<b>Environment</b>		
Aquatic acute	Aquatic acute 1	H400
Aquatic chronic	Aquatic chronic 1	H410

### The most important adverse effects:

#### Physiochemical effects:

None known

#### Human health effects:

May be harmful if swallowed (Acute Tox. 5).  
Causes severe skin burns and eye damage (Skin Corr. 1B).  
Causes serious eye irritation (Eye Irrit. 2).  
May cause respiratory irritation (STOT SE 3).  
May damage fertility or the unborn child (Repr. 1B).

### Label elements:



**Signal word:** Danger

### Hazard statements:

H303: May be harmful if swallowed.  
H314: Causes severe skin burns and eye damage.  
H319: Causes serious eye irritation.  
H335: May cause respiratory irritation.  
H360d: May damage unborn child.  
H400: Very toxic to aquatic life.  
H410: Very toxic to aquatic life with long lasting effects.

### Precautionary statements:

P203: Obtain, read and follow all safety instructions before use.  
P260+P261: Avoid breathing dust, fumes, mists, gas, vapours or spray.  
P264+P265: Wash hands and face thoroughly after handling. Do not touch eyes.  
P271: Use only outdoors in a well-ventilated area.  
P273: Avoid release into the environment.  
P280: Wear impervious rubber gloves and boots, protective clothing and chemical safety goggles.  
P301+P317: IF SWALLOWED: Get medical help.  
P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P302+P361+P354: IF ON SKIN: Take off immediately all contaminated clothing. Immediately rinse with water for several minutes.  
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P305+P351+P354+P338: IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P316: Get emergency medical help immediately.  
P318: IF exposed or concerned, get medical advice.  
P319: Get medical help if you feel unwell.  
P337+P317: If eye irritation persists: Get medical help.  
P363: Wash contaminated clothing before use.  
P391: Collect spillage.  
P403+P233: Store in a well-ventilated place. Keep container tightly closed.  
P405: Store locked up.  
P501: Dispose of contents/container in accordance with local regulations.

### Special labelling of certain mixtures:

None known.

### Other hazards:

None known.

### Toxicity:

# REACT 100 EC

# SAFETY DATA SHEET

Classification according to GHS: Category 5

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

**Substance/Mixture:** Mixture

**Composition:**

Chemical Name	CAS	Conc. (m/v %)	Classification EC 1272/2008
Novaluron	116714-46-6	10 %	Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)
Polyoxyethelenealkyl (C 10-12) ether phosphate	39464-66-9	< 25 %	Skin Corr. 1B (H314) Aquatic Acute 1 (H400)
N-Methyl-2-pyrrolidone	872-50-4	< 20 %	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) STOT SE 3 (H335) Repr. 1B (H360d)

## 4. FIRST AID MEASURES

Remove the victim from the area of exposure. Wash off remaining material with plenty of water. In the event of any complaints or symptoms, avoid further exposure. Immediately consult a doctor.

**Inhalation:** Remove person from contaminated area to fresh air and assist breathing as needed. **Seek medical attention if irritation occurs.**

**Skin:** Remove contaminated clothing and shoes. Gently wipe off excess chemical. Wash skin gently and thoroughly with water and non-abrasive soap. **Obtain medical attention if irritation persists.**

**Eyes:** Flush eyes with clean water for at least 15 – 20 minutes. Lift eyelids to facilitate irrigation. If present, remove contact lenses after 5 minutes and continue rinsing. **Seek medical attention.**

**Ingestion:** Seek medical attention or call a poison control centre for treatment advice. Do not induce vomiting unless instructed to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person. If the person is alert, rinse mouth thoroughly with water.

**Anticipated acute effects:** Harmful if inhaled. May cause respiratory irritation. May damage unborn child.

**Anticipated delayed effects:** None known.

**Most important symptoms/effects:** None known.

**Advice to physician:** Treat symptomatically and supportively. No specific antidote known.

## 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media:** Use carbon dioxide or dry chemical for small fires and water fog or foam for large fires.

**Unsuitable Extinguishing Media:** High volume water jet. Use a water jet only to cool heated containers.

**Specific hazards:** Fire may produce poisonous gases.

**Special Fire Fighting Procedures:** Remove spectators from surrounding area. Isolate the fire area and evacuate all personnel downwind of the fire. Fight fire from maximum distance and use unmanned hose holder or monitor nozzles. Keep upwind. Avoid inhaling hazardous vapours and fumes from burning materials. Remove container from fire area if possible and without risk. Do not use high volume water jet, due to contamination risk. Do not scatter the burning material. Water can be used to cool unaffected containers but must be contained for later disposal. Contain fire control agents for later disposal. Avoid pollution of waterways by run-off from the site.

**Personal protective equipment:** Wear NIOSH/MSHA approved self-contained breathing apparatus and full protective gear.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Avoid contact with eyes and skin. Do not breathe in fumes. Ventilate area of spill, especially in contained areas.

**Protective equipment:** Refer to Section 8 for personal protective equipment to be worn during containment and clean-up of a spill involving this product.

**Emergency procedures:** Alert firefighting personnel, evacuate unprotected personnel and animals.

**Environmental Precautions:** Prevent spilled product from entering sewers, waterways or ground water. This product is classified to be toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment. Any spillages or uncontrolled discharges into watercourses should be reported immediately to the police and the Department of Water/Environmental Affairs.

**Methods and Materials for Containment:** Contain spilled product by diking area with sand or earth.

**Methods and Materials for Clean-up:** Cover contained spill with an inert absorbent material such as sand, vermiculite, earth or other appropriate material. Vacuum, scoop, or sweep up material and place the material into a clean, dry, sealable container. Label containers with the contents and dispose of according to local regulations. Do not place spilled material back in original container. Do not re-use spilled material. Collect washings and add to the drums already collected. Do not flush spilled material or washings into drains or waterways. To decontaminate the spill area, tools and equipment, wash with water and suitable detergent. See section 13 for disposal considerations.

## REACT 100 EC

## SAFETY DATA SHEET

### 7. HANDLING AND STORAGE

#### Handling:

**Precautions for safe handling:** Avoid contact with skin and eyes. Ensure adequate ventilation during handling and use. Do not handle broken packages without protective equipment. Immediately clean up spills that occur during handling. Keep containers closed when not in use. In the case of contact with the product refer to First Aid Measures – Section 4.

**General occupational hygiene:** Practice good hygiene when using this material. Wash hands before eating, drinking, chewing gum, smoking, using the toilet or applying cosmetics. Worker should shower at the end of each workday. Launder all clothing before it is re-used.

#### Storage:

**Conditions for safe storage:** Keep under lock and key and out of reach of unauthorised persons, children and animals. Store in its original container in dry, cool, well-ventilated area. Avoid excess heat. Not to be stored next to foodstuffs, feed and water supplies. Keep out of reach of children, uninformed persons and animals. Do not contaminate other pesticides and fertilizers.

**Incompatible substances and mixtures:** Refer to product label.

**Packaging material:** Fluorinated plastic containers.

### 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

#### Permissible concentration

Components	Exposure limits	Type of exposure limit	Source
N-Methyl-2-pyrrolidone	100 ppm	400 mg/m <sup>3</sup> (TWA)	OEL

#### Engineering Controls:

It is essential to provide adequate ventilation. The measures appropriate for a particular worksite depend on how this material is used and on the extent of exposure. Local Exhaust: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OELs or other specified exposure limits. Local exhaust ventilation is preferred. Ensure that control systems are properly designed and maintained. Comply with occupational safety, environmental, fire, and other applicable regulations.

#### Personal Protective Equipment:

**Respiratory Protection:** Wear an organic cartridge respirator suitable for protection from mists/ vapours of pesticides if inhalation is likely to occur.

For most well-ventilated conditions, no respiratory protection should be needed. If used in a poorly ventilated area (airborne concentrations exceed exposure limits), use a NIOSH approved air-purifying respirator with cartridges/canisters approved for organic vapours.

**Hand Protection:** The use of chemically protective gloves is recommended to prevent against skin contact.

**Eye Protection:** The use of chemical safety goggles is recommended to prevent against eye contact. Contact lenses are not protective eye devices.

**Skin and Body Protection:** It is recommended that the employee wear appropriate protective (impervious) clothing; boots, hat and equipment to prevent repeated or prolonged skin contact with this mixture. Do not wear leather clothing

**Emergency eyewash:** Where there is any possibility that an employee's eyes may be exposed to this substance; the employer should provide an eye wash fountain or appropriate alternative within the immediate work area for emergency use.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Pale Yellow to brown liquid

**Odour:** Faint odour.

**pH (1% aqueous dilution):** 3.20

**Melting point:** Not available.

**Freezing Point:** Not available.

**Boiling Point:** Not available.

**Flash Point:** 202 °C (Close cup)

**Flammability:** Not flammable.

**Upper/lower explosion limits:** Not available

**Vapour Pressure (mm Hg):** Not available.

**Relative Vapour Density:** Not available.

**Density/Relative density:** 1.07 g/ml @ 20 °C.

**Solubility:** Emulsifies in water.

**n-octanol/water partition coefficient:** Not available

**Auto-ignition temperature:** Not available.

**Decomposition temperature:** Not available.

**Viscosity:** Not available

### 10. STABILITY AND REACTIVITY

**Chemical Stability:** The product is stable for two years at ambient temperature and pressure, under normal storage and handling conditions. Avoid storage under extreme temperatures and conditions. Store below 50 °C, preferably below 30 °C, and not for prolonged periods in direct sunlight.

**Reactivity:** None known.

**Possibility of Hazardous Reactions:** Will not occur.

**Conditions to Avoid:** Extreme heat or exposure to flames.

**Incompatible Materials:** Not compatible with strong acids and strong bases.

**Hazardous Decomposition Products:** None known.

### 11. TOXICOLOGICAL INFORMATION

#### ACUTE TOXICITY:

Calculated according to GHS:



## REACT 100 EC

## SAFETY DATA SHEET

**Oral LD<sub>50</sub>** 3682 mg/kg.  
**Dermal LD<sub>50</sub>** > 5689 mg/kg.  
**Inhalation LC<sub>50</sub>** 21.87 mg/l.  
**Skin Irritation/Corrosion:** Causes severe skin burns and eye damage.  
**Eye Damage/Irritation:** Causes serious eye irritation.  
**Skin Sensitization:** Not classified.  
**Respiratory Sensitization:** Not classified.  
**Reproductive cell mutagenicity:** Not classified.  
**Carcinogenicity:** Not classified.  
**Reproductive toxicity:** May damage fertility or the unborn child.  
**Specific target organ toxicity – single exposure:** May cause respiratory irritation.  
**Specific target organ toxicity – repeated exposure:** Not classified.  
**Aspiration hazard:** Not classified.  
**Chronic Effects:** None known.  
**POTENTIAL ADVERSE EFFECTS:**  
May be harmful if swallowed and causes severe skin burns and eye damage/irritation. May cause respiratory irritation and damage fertility or the unborn child.

### 12. ECOLOGICAL INFORMATION

This product is considered a marine pollutant.

#### ECOTOXICITY DATA:

##### Active ingredient: Novaluron

<b>Fish:</b>		
LC <sub>50</sub> (96 h)	Rainbow trout	> 1 mg/l
<b>Daphnia:</b>		
EC <sub>50</sub> (48 h)		0.259 µg/l
<b>Algae:</b>		
EC <sub>50</sub> (72 h)	<i>S. capricornutum</i>	9.68 mg/l.
<b>Birds:</b>		
Acute oral LD <sub>50</sub>	Mallard ducks	>2000 mg/kg
Dietary LC <sub>50</sub> (8 d)	Bobwhite quail	>2000 mg/kg.
<b>Bees:</b>		
LD <sub>50</sub> contact		>100 µg/bee
LD <sub>50</sub> oral		>100 µg/bee
<b>Worms:</b>		
LC <sub>50</sub>		>1000 mg/kg

#### ENVIRONMENTAL EFFECTS:

**Based on information for the active ingredient: Novaluron**

**Animals:** Rapidly but not extensively absorbed, following oral administration. The absorbed portion is extensively metabolised by cleavage of the urea bridge, forming 2,6-difluorobenzoic acid. The major route of elimination was via the faeces. Up to 4.3% of **Novaluron** administered remained in the body, with highest residues in fat tissue.

**Persistence and degradability:** DT<sub>50</sub> (aerobic) 68.5–75.5 d (sandy loam and loamy sand soils).  
**Bio-accumulative Potential:** Not determined.  
**Mobility in soil:** Not determined.  
**Other adverse effects:** Not determined.

### 13: DISPOSAL CONSIDERATIONS

**Waste:** Open dumping or burning of this pesticide is prohibited. Waste resulting from the use of this product cannot be reused or re-processed. Never pour untreated waste or surplus product into public sewers or where there is any danger of run-off or seepage into water systems. Do not contaminate rivers, dams or any other water sources with the product or used containers. Comply with local legislation applying to waste disposal. The product may be taken to a registered waste disposal site or incineration plant.

**Container:** Emptied containers retain product residues. Do not re-use the empty container for any other purpose.  
**TRIPLE RINSE THE EMPTY CONTAINER AS FOLLOWS:** Invert the empty container over the spray or mixing tank and drain for at least 30 seconds after the flow has slowed down to dripping. Thereafter rinse the empty container three times in succession with one quarter of the container volume fresh water and decant the rinsate into the spray or mixing tank. Puncture the triple rinsed container and dispose of via an approved collector or recycler ([www.croplife.co.za](http://www.croplife.co.za)). Do not bury, burn, or donate the container to any other parties that may use it as a container for food or beverages. Observe all labelled safeguards until container is destroyed.

### 14: TRANSPORT INFORMATION

<b>UN Number:</b>	<b>1760</b>
<b>Road Transport ADR/IRD:</b>	
Class:	8
Packaging group:	II
UN Proper Shipping Name:	CORROSIVE LIQUID, N.O.S. (novaluron 100 g/l)
<b>Maritime Transport IMDG/IMO:</b>	
Class:	8
Packaging group:	II
UN Proper Shipping Name:	CORROSIVE LIQUID, N.O.S. (novaluron 100 g/l)
<b>Marine Pollutant (Y/N):</b>	<b>Yes</b>
<b>Air Transport IATA/ICAO:</b>	
Class:	8
Packaging group:	II
UN Proper Shipping Name:	CORROSIVE LIQUID, N.O.S. (novaluron 100 g/l)
<b>Special/Environmental Precautions:</b>	None known.

## REACT 100 EC

## SAFETY DATA SHEET

**Transport in bulk** (according to MARPOL 73/78, Annex II and the IBC code): Not available.

### 15: REGULATORY INFORMATION

**Safety, health and environmental regulations/ legislation for the mixture:**

OHSA 1993 Regulations for Hazardous Chemical Substances.

**Relevant information regarding restrictions:** None.

**EU regulation:** Regulation EC1272/2008 (EU-GHS/CLP)

**Other national regulations:** None.

**Chemical Safety Assessment carried out?** No

### 16: OTHER INFORMATION

**Packaging:** Packed in 0.5, 1, 2, 5, 10, 20 and 25 litres fluorinated plastic containers, labelled according to South African regulations and guidelines.

**Other hazard statements, abbreviations, and explanations:**

**H315:** Causes skin irritation.

**IATA:** International Air Transport Association.

**IBC:** International Bulk Chemical.

**ICAO:** International Civil Aviation Organization.

**IMDG:** International Maritime Dangerous Goods

**IMO:** International Maritime Organization.

**LD<sub>50</sub> value:** The median lethal dose or the amount of a toxic agent that is sufficient to kill 50 percent of a population within a certain period of time.

**OEL/RL:** Occupational exposure limit-recommended limit.

**TWA:** Time-weighted average – The average exposure over a specified period, usually a nominal eight hours.

**ST/STEL:** Short-term exposure limits.

**Disclaimer:** The information on this sheet is not a specification; it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage, and use of the product. It is not applicable to unusual or non-standard uses of the product nor where instructions or recommendations are not followed. All information is given in good faith but without guarantee in respect of accuracy, and no responsibility is accepted for errors and omissions or the consequence thereof.

### END OF DOCUMENT

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For detailed information on revisions, contact the Registration holder.