

## MATERIAL SAFETY DATA SHEET

**STATEMENT OF HAZARDOUS NATURE:**  
Hazardous according to the criteria of NOHSC

**COMPANY DETAILS:**

Syngenta Crop Protection Pty Limited  
ABN 33 002 933 717  
140-150 Bungaree Rd.,  
PENDLE HILL, NSW, 2145

Telephone No.: (02) 9688 0444  
24 Hours Emergency No.: 1 800 033 111

### IDENTIFICATION

**PRODUCT NAME:** ZOLIAR<sup>®</sup> DF Herbicide

<b>Formulation type:</b>	water dispersible granule	<b>Dangerous Goods Class/</b>	
<b>Active Ingredient:</b>	norflurazon	<b>and Subsidiary Risk (ADG):</b>	none allocated
<b>Novartis Code No.:</b>	SAN9789H	<b>Hazchem Code:</b>	none allocated
<b>Chemical type:</b>	pyridazinone	<b>Packing Group:</b>	none allocated
<b>UN Number:</b>	none allocated	<b>Poisons Schedule:</b>	exempt

**USE:** A pre-emergence selective residual herbicide for weed control in Cotton

**PHYSICAL DESCRIPTION/PROPERTIES**

<b>Appearance:</b>	Beige brown granule	<b>Flash Point:</b>	Does not flash
<b>Odour:</b>	Odourless	<b>Flammability:</b>	Non-flammable
<b>Vapour pressure:</b>	< 1 mm Hg at 25°C	<b>Behaviour in water:</b>	Dispersible in water
<b>Bulk density:</b>	0.7 g/cm <sup>3</sup>	<b>pH (1% aqueous):</b>	8.0

**OTHER PROPERTIES**

<b>Explosive properties:</b>	Non-explosive	<b>Oxidising properties:</b>	Non oxidising
<b>Thermal sensitivity:</b>	Stable up to 210°C	<b>Combustibility:</b>	Non-combustible
<b>Particle size:</b>	63 - 355 micron		

**INGREDIENTS -**

	CAS No.	Content (% w/w)
Norflurazon technical (min. 97%)	27314-13-2	82.5
to give norflurazon		80.0
other ingredients determined not to be hazardous		to 100

### HEALTH HAZARD INFORMATION

**HEALTH EFFECTS**

**ACUTE**

**Toxicity** - This product is slightly hazardous (WHO Hazard Class III)

Swallowed:	<b>LOW TOXICITY</b> Tests on rats indicate a low toxicity following a single dose of a similar undiluted product. (LD <sub>50</sub> > 1140 mg/kg)
Dermal absorption:	<b>LOW TOXICITY</b> Tests on rats indicate low toxicity due to skin contact with the norflurazon technical. (LD <sub>50</sub> > 2,000 mg/kg)
Inhaled:	<b>LOW TOXICITY</b> Tests on rats indicate a low toxicity due to inhalation of a similar formulation of undiluted product. (LC <sub>50</sub> (4 h) > 2,600 mg/m <sup>3</sup> ).

**Irritation**

Eye: **NON-IRRITANT**  
Skin: **NON-IRRITANT**

**Skin Sensitisation** - (Based on results of **norflurazon technical** on guinea pigs) -  
**NOT A SENSITISER**

**CHRONIC** (Active Ingredient)

**Norflurazon technical** has been extensively tested on laboratory mammals and in test tube systems. No evidence of any carcinogenic, mutagenic, teratogenic or reproductive effects has been found.

**FIRST AID**

**In case of poisoning by any exposure route contact a doctor or Poisons Information Centre. Phone 131 126.**

Swallowed: If swallowed, and if more than 15 minutes from a hospital, induce vomiting preferably using Ipecac Syrup APF. Contact a doctor or Poisons Information Centre.  
Eye: Avoid contact with eyes. If product gets in eyes wash it out immediately with water.  
Skin: Avoid contact with skin. If skin contact occurs remove contaminated clothing and wash affected areas thoroughly with soap and water.  
Inhaled: Move person to fresh air and keep at rest until recovered.

**ADVICE TO DOCTOR**

No specific antidote is available. If poisoning is suspected apply symptomatic therapy.

**PRECAUTIONS FOR USE**

**ALWAYS READ AND FOLLOW THE LABEL INSTRUCTIONS AND WARNINGS**

**EXPOSURE STANDARDS**

No exposure standards have been set for the components of this product.

**Exposure Potential** - Swallowing is unlikely under normal conditions of usage. Skin uptake and inhalation of spray mist are possible routes of exposure. This product is diluted with water prior to use as a spray. This diluted form is less toxic by all exposure routes.

**Re-entry Period** - Do not enter treated areas without protective clothing until spray has dried.

**ENGINEERING CONTROLS**

No special requirements. Product is used outdoors.

**PERSONAL PROTECTION**

Avoid contact with eyes and skin. Do not inhale dust or spray mist. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.

**FLAMMABILITY**

This product is NON-FLAMMABLE and non-explosive.

**SAFE HANDLING INFORMATION****STORAGE AND TRANSPORT**

Store in tightly sealed original containers in a dry secure place away from fertilisers, seed, feed and food. Store out of direct sunlight. Keep out of reach of children, unauthorised persons and animals.

**SPILLS AND DISPOSAL**

In case of spillage it is important to take all steps necessary to:

- Avoid eye and skin contact.
- Avoid contamination of waterways.

**Procedure for spill:**

- (1) Keep all bystanders away.
- (2) Wear full length clothing and PVC gloves.
- (3) Reposition any leaking containers so as to minimise leakage.
- (4) **For a product spill:** Sweep granule concentrate into a pile.  
**For a prepared spray spill:** Dam and absorb spill with an absorbent material (eg. sand or soil).
- (5) Shovel the absorbed material or granule concentrate into drums.
- (6) Disposal of the absorbed material will depend upon the extent of the spill.
  - For quantities up to 50 kg of product bury in a secure landfill site.
  - For quantities greater than 50 kg seek advice from the manufacturer (use emergency contact number below) before attempting disposal. Contain in a secure location until disposal method is established.
- (7) Decontaminate the spill area with detergent and water and rinse with water.

**Dispose of empty, used containers by:**

- (a) Single rinse before disposal. Add rinsings to spray tank.
- (b) DO NOT dispose of undiluted chemicals on site.
- (c) Puncture or shred and bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.

**FIRE/EXPLOSION HAZARD**

This product is non-flammable and non-explosive. Extinguish warehouse and factory fires using fine-water spray or foam. During a fire this product may release smoke and hazardous decomposition products. When fighting a major fire wear an air-supplied respirator.

**OTHER INFORMATION**

**Norflurazon technical** is toxic to fish (LC<sub>50</sub> (96h) rainbow trout > 20 mg/L), has low toxicity to birds (LD<sub>50</sub> mallard ducks > 2510 mg/kg) and is non-toxic to bees.

**Note:** This product is a registered agricultural chemical and must therefore be used in accordance with the container label directions. A comprehensive package of toxicological and environmental data for the active ingredients of this product has been submitted to the Federal health and environment authorities and has been evaluated by expert toxicologists and environmental scientists.

<b>CONTACT POINT:</b> Regulatory Affairs Manager - Crop Protection - (02) 9688 0444 <b>24 HOURS EMERGENCY CONTACT: 1 800 033 111</b>
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This Material Safety Data Sheet summarises our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace including in conjunction with other products.

If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company.

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