MATERIAL SAFETY DATA SHEET
Pascale

IDENTIFICATION OF THE SUPPLIER:

AGRO CHEMICALS INDUSTRIES LTD
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PRODUCT IDENTIFICATION:

Common Name: Diafenthiuron
Trade Name: Pascale
Chemical Name: 1-tert-butyl-3-[4-phenoxy-2,6-di(propan-2-yl)phenyl]thiourea

Chemical Formula: $C_{23}H_{32}N_2OS$
Molecular Weight: 384.6

PRODUCT COMPOSITION:

Active Ingredient:	g/l	CAS #
Diafenthiuron	500	*[80060-09-9]*

Inert materials: up to 1 liter

HAZARD IDENTIFICATION:

Classification of the substance or mixture
Classification according to Regulation (EU) 1272/2008

Acute toxicity (Oral)	Category 4	H302
Acute toxicity (Inhalation)	Category 3	H331
Specific target organ toxicity - repeated exposure (Dermal)	Category 2	H373
Specific target organ toxicity - repeated exposure (Oral)	Category 2	H373
Acute aquatic toxicity	Category 1	H400
Chronic aquatic toxicity	Category 1	H410

For the full text of the H-Statements mentioned in this Section, see Section 16.
Classification according to EU Directives 67/548/EEC or 1999/45/EC

T, Toxic
N, Dangerous for the environment
R22: Harmful if swallowed.
R23: Toxic by inhalation.
R48/21/22: Harmful: danger of serious damage to health by prolonged exposure in contact with skin and if swallowed.
R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Label elements
Labelling: Regulation (EC) No. 1272/2008
Hazard pictograms

Signal word	:	Danger	
Hazard statements	:	H302	Harmful if swallowed.
		H331	Toxic if inhaled.
		H373	May cause damage to organs through prolonged or repeated exposure if swallowed.
		H373	May cause damage to organs through prolonged or repeated exposure in contact with skin.
		H410	Very toxic to aquatic life with long lasting effects.
Precautionary statements	:	P102	Keep out of reach of children.
		P270	Do not eat, drink or smoke when using this product.
		P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
		P271	Use only outdoors or in a well-ventilated area.
		P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
		P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
		P311	Call a POISON CENTER or doctor/ physician.
		P391	Collect spillage.
		P501	Dispose of contents/ container to an approved waste disposal plant.
Supplemental information	:	EUH401	To avoid risks to human health and the environment, comply with the instructions for use.

Hazardous components which must be listed on the label:
• diafenthiuron
Labelling: EU Directives 67/548/EEC or 1999/45/EC Symbol(s)

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R-phrase(s): R22 Harmful if swallowed.
R23 Toxic by inhalation.
R48/21/22 Harmful: danger of serious damage to health by prolonged exposure in contact with skin and if swallowed.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrase(s) : S 2 Keep out of the reach of children.
S13 Keep away from food, drink and animal feedingstuffs.
S20/21 When using do not eat, drink or smoke.
S35 This material and its container must be disposed of in a safe way.
S36/37 Wear suitable protective clothing and gloves.
S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S57 Use appropriate container to avoid environmental contamination.

Additional Labelling : To avoid risks to man and the environment, comply with the instructions for use.
Hazardous components which must be listed on the label: • diafenthiuron
Other hazards none known.

FIRST-AID MEAUSRES:

General advice: Have the product container, label or Material Safety Data Sheet with you when calling the Syngenta emergency number, a poison control center or physician, or going for treatment.
Inhalation: Move the victim to fresh air. If breathing is irregular or stopped, administer artificial respiration. Keep patient warm and at rest. Call a physician or poison control centre immediately. **Skin contact** : Take off all contaminated clothing immediately. Wash off immediately with plenty of water. If skin irritation persists, call a physician. Wash contaminated clothing before re-use.
Eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. Immediate medical attention is required.
I**ngestion**: If swallowed, seek medical advice immediately and show this container or label. Do NOT induce vomiting.
Symptoms: No information available.

Medical advice: There is no specific antidote available. Treat symptomatically.

FIRE-FIGHTING MEASURES: -

Extinguishing media
Extinguishing media - small fires
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Extinguishing media - large fires Alcohol-resistant foam or Water spray
Does not use a solid water stream as it may scatter and spread fire.

Special hazards arising from the substance or mixture
As the product contains combustible organic components, fire will produce dense black smoke containing hazardous products of combustion (see section 10). Exposure to decomposition products may be a hazard to health.

Advice for firefighters
Wear full protective clothing and self-contained breathing apparatus. Do not allow run-off from fire fighting to enter drains or water courses. Cool closed containers exposed to fire with water spray.

ACCIDENTAL RELEASE MEASURES:

Personal precautions, protective equipment and emergency procedures
Refer to protective measures listed in sections 7 and 8.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system.

Methods and materials for containment and cleaning up
Contain spillage, and then collect 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). If the product contaminates rivers and lakes or drains inform respective authorities.

Reference to other sections
Refer to protective measures listed in sections 7 and 8. Refer to disposal considerations listed in section 13.

HANDLING AND STORAGE:

Precautions for safe handling
No special protective measures against fire required.
Avoid contact with skin and eyes.

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When using do not eat, drink or smoke.
For personal protection see section 8.

Conditions for safe storage, including any incompatibilities

No special storage conditions required.
Keep containers tightly closed in a dry, cool and well-ventilated place.
Keep out of the reach of children. Keep away from food, drink and animal feedingstuffs.
: Physically and chemically stable for at least 2 years when stored in the original unopened sales container at ambient temperatures.
Specific end uses

Registered Crop Protection products: For proper and safe use of this product, please refer to the approval conditions laid down on the product label.

STABILITY AND REACTIVITY:

Reactivity: No information available.
Chemical stability: No information available.
Possibility of hazardous reactions: none known. Hazardous polymerisation does not occur.
Conditions to avoid: No information available.
Incompatible materials: No information available.
Hazardous decomposition products: Combustion or thermal decomposition will evolve toxic and irritant vapors.

PHYSICAL AND CHEMICAL PROPERTIES:

Physical state: liquid
Form : liquid
Colour : white to dark beige
Odour : no data available
Odour Threshold: no data available
PH: 6 - 10 at 1 % w/v
Melting point/range: no data available
Boiling point/boiling range: > 90 °C
Flash point: > 100 °C at 978.4 hPa DIN EN 22719
Evaporation rate: no data available
Flammability (solid, gas): not highly flammable
Lower explosion limit: no data available
Upper explosion limit: no data available
Vapour pressure: no data available
Relative vapour density: no data available

Density: 1.03 - 1.07 g/cm3 at 20 °C
Solubility in other solvents: no data available
Partition coefficient n-octanol/water: no data available
Autoignition temperature: no data available
Thermal decomposition: no data available
Viscosity, dynamic: 66.0 - 285 mPa.s at 40 °C
82.3 - 293 mPa.s at 20 °C
Viscosity, kinematic: no data available
Explosive properties: Not explosive
Oxidizing properties: not oxidizing
Other information
Miscibility: Miscible
Surface tension: 42.3 mN/m at 20 °C

PERSONAL PROTECTION/SAFTETY:

Control parameters

Components	Exposure limit(s)	Type of exposure limit	Source
diafenthiuron	0.2 mg/m3 (Skin)	8 h TWA	SYNGENTA
propane-1,2-diol	10 mg/m3 (Particulates) 150 ppm, 470 mg/m3 (Total (vapour & particulates))	8 h TWA 8 h TWA	UK HSE UK HSE

The following recommendations for exposure controls/personal protection are intended for the manufacture, formulation and packaging of the product.

Exposure controls

Engineering measures: 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 vapors 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. Protective measures: The use of technical measures should always have priority over the use of personal protective equipment.
When selecting personal protective equipment, seek appropriate professional advice. Personal protective equipment should be certified to appropriate standards.

Respiratory protection: A particulate filter respirator may be necessary until effective technical measures are installed. Protection provided by air-purifying respirators is limited. 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.

Hand protection: Chemical resistant gloves should be used. Gloves should be certified to an appropriate standard. Gloves should have a minimum breakthrough time that is appropriate to the duration of exposure. The breakthrough time of gloves varies according to the thickness, material and manufacturer. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Suitable material Nitrile rubber

Eye protection: Eye protection is not usually required. Follow any site specific eye protection policies.
Skin and body protection: Assess the exposure and select chemical resistant clothing based on the potential for contact and the permeation / penetration characteristics of the clothing material. Wash with soap and water after removing protective clothing. Decontaminate clothing before re-use, or use disposable equipment (suits, aprons, sleeves, boots, etc.) Wear as appropriate: impervious protective suit

TOXICOLOGICAL INFORMATION:

Acute oral toxicity: LD50 rat, 1,950 mg/kg
Acute inhalation toxicity: rat, Derived from components.
Toxic by inhalation.
Acute dermal toxicity: LD50 rat, > 4,000 mg/kg
Skin corrosion/irritation: rabbit: Non-irritating
Serious eye damage/eye irritation: rabbit: Non-irritating
Respiratory or skin sensitization: guinea pig: not sensitizing
Mutagenicity
diafenthiuron : Did not show mutagenic or teratogenic effects in animal experiments.

Carcinogenicity
diafenthiuron : In animal studies (rat, mouse, dog), prolonged exposure to diafenthiuron has been shown to produce lung damage. In mice, chronic oral administration has produced lung tumours at high dose levels.

Reproductive toxicity
diafenthiuron : Did not show reproductive toxicity effects in animal experiments

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ENVIRONMENTAL TOXICITY DATA:

Toxicity

Toxicity to fish: LC50 Lepomis macrochirus (Bluegill sunfish), 0.00046 mg/l , 96 h
: LC50 Danio rerio (zebra fish), 0.030 mg/l , 96 h

Toxicity to aquatic invertebrates
: EC50 Daphnia magna (Water flea), 0.00062 mg/l , 48 h
: EC50 Daphnia similis, 0.007 mg/l , 48 h

Toxicity to aquatic plants: ErC50 Pseudokirchneriella subcapitata (green algae), > 100 mg/l , 72 h

Persistence and degradability

Biodegradability diafenthiuron: no data available
Stability in soil diafenthiuron : Not persistent in soil.

Bioaccumulative potential
diafenthiuron : Diafenthiuron bioaccumulates.

Mobility in soil
diafenthiuron : Diafenthiuron is immobile in soil.

Results of PBT and vPvB assessment
diafenthiuron: This substance is not considered to be persistent, bioaccumulating nor
Toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

Other adverse effects
None known

DISPOSAL CONSIDERATIONS:

Product: Do not contaminate ponds, waterways or ditches with chemical or used Container.
Do not dispose of waste into sewer.

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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 to an approved waste handling site for recycling or disposal.
Do not re-use empty containers

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