

**PENNANT MAGNUM**

Version 1.0      Revision Date: 24.10.2018      SDS Number: S22799952      This version replaces all previous versions.

**1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : PENNANT MAGNUM  
Product code : PENNANT MAGNUM  
Design code : A9793D

**Manufacturer or supplier's details**

Company : Syngenta SA (Pty) Ltd  
Address : P.O. Box 1044, No. 4 Krokodil drift Avenue  
Brits 0250  
South Africa  
Telephone : +27 12 2502 120  
Telefax : +27 12 2503 125

**Recommended use of the chemical and restrictions on use**

Recommended use : Herbicide

**2. HAZARDS IDENTIFICATION****Most important hazards****Other hazards**

None known.

**3. COMPOSITION/INFORMATION ON INGREDIENTS****Components**

Chemical name	CAS-No.	Classification	Concentration (% w/w)
S-metolachlor	87392-12-9	Skin Sens. 1; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	$\geq 70$ - $< 90$
Solvent naphtha (petroleum), heavy arom.; Kerosine -unspecified	64742-94-5	Asp. Tox. 1; H304 Aquatic Chronic 2; H411	$\geq 2,5$ - $< 10$
Tallow alkylamine ethoxylate	9081-17-8	Acute Tox. 4; H302 Skin Corr. 1C; H314 Eye Dam. 1; H318 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	$\geq 5$ - $< 10$

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nonylphenol ethoxylate propoxylate	37251-69-7	Aquatic Chronic 3; H412	$\geq 2,5 - < 10$
naphthalene	91-20-3	Flam. Sol. 2; H228 Acute Tox. 4; H302 Carc. 2; H351 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	$\geq 0,25 - < 1$
1,2,4-trimethylbenzene	95-63-6	Flam. Liq. 3; H226 Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335 Aquatic Chronic 2; H411	$\geq 0,1 - < 0,25$

For explanation of abbreviations see section 16.

### 4. FIRST AID MEASURES

- General advice : Have the product container, label or Safety Data Sheet with you when calling the emergency number, a poison control center or physician, or going for treatment.
- If inhaled : 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.
- In case of 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.
- In case of 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.
- If swallowed : If swallowed, seek medical advice immediately and show this container or label.  
Do not induce vomiting: contains petroleum distillates and/or aromatic solvents.
- Most important symptoms and effects, both acute and delayed : Aspiration may cause pulmonary oedema and pneumonitis.
- Notes to physician : There is no specific antidote available.  
Treat symptomatically.  
Do not induce vomiting: contains petroleum distillates and/or aromatic solvents.

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**5. FIREFIGHTING MEASURES**

- Suitable 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
- Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.
- Specific hazards during firefighting : 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.
- Specific extinguishing methods : Do not allow run-off from fire fighting to enter drains or water courses.  
Cool closed containers exposed to fire with water spray.
- Special protective equipment for firefighters : Wear full protective clothing and self-contained breathing apparatus.

**6. 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.  
If the product contaminates rivers and lakes or drains inform respective authorities.
- 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).  
Clean contaminated surface thoroughly.  
Clean with detergents. Avoid solvents.  
Retain and dispose of contaminated wash water.

**7. HANDLING AND STORAGE**

- Advice on safe handling : No special protective measures against fire required.  
Avoid contact with skin and eyes.  
When using do not eat, drink or smoke.  
For personal protection see section 8.
- Conditions for safe storage : No special storage conditions required.

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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.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
S-metolachlor	87392-12-9	TWA	5 mg/m <sup>3</sup>	Syngenta
Solvent naphtha (petroleum), heavy arom.; Kerosine - unspecified	64742-94-5	TWA	100 mg/m <sup>3</sup>	Supplier
naphthalene	91-20-3	TWA	10 ppm 50 mg/m <sup>3</sup>	91/322/EEC
		TWA OEL-RL	10 ppm 50 mg/m <sup>3</sup>	ZA OEL
Further information: Recommended Limit				
		STEL OEL-RL	15 ppm 75 mg/m <sup>3</sup>	ZA OEL
Further information: Recommended Limit				
1,2,4-trimethylbenzene	95-63-6	TWA	20 ppm 100 mg/m <sup>3</sup>	2000/39/EC
		TWA OEL-RL	25 ppm 123 mg/m <sup>3</sup>	ZA OEL
Further information: Recommended Limit				

**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.

Maintain air concentrations below occupational exposure standards.  
Where necessary, seek additional occupational hygiene advice.

#### Personal protective equipment

**Respiratory protection** : No personal respiratory protective equipment normally required.  
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

**Hand protection**

Material : Nitrile rubber  
Break through time : > 480 min  
Glove thickness : 0,5 mm

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- Remarks : Wear protective gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. The breakthrough time depends amongst other things on the material, the thickness and the type of glove and therefore has to be measured for each case. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
- Eye protection : No special protective equipment required.
- Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.  
Remove and wash contaminated clothing before re-use.  
Wear as appropriate:  
Impervious clothing
- 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.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

- Appearance : liquid
- Colour : No data available
- Odour : No data available
- Odour Threshold : No data available
- pH : No data available
- Melting point/range : No data available
- Boiling point/boiling range : No data available
- Flash point : No data available
- Evaporation rate : No data available
- Flammability (solid, gas) : No data available
- Upper explosion limit / Upper : No data available

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flammability limit

Lower explosion limit / Lower  
flammability limit : No data available

Vapour pressure : No data available

Relative vapour density : No data available

Density : 1,093 g/cm<sup>3</sup>

Solubility(ies)

Solubility in other solvents : No data available

Partition coefficient: n-  
octanol/water : No data available

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Viscosity

Viscosity, dynamic : No data available

Explosive properties : No data available

Oxidizing properties : No data available

**10. STABILITY AND REACTIVITY**

Reactivity : None reasonably foreseeable.

Chemical stability : Stable under normal conditions.

Possibility of hazardous  
reactions : No dangerous reaction known under conditions of normal use.

Conditions to avoid : No decomposition if used as directed.

Incompatible materials : None known.

Hazardous decomposition  
products : No hazardous decomposition products are known.**11. TOXICOLOGICAL INFORMATION**Information on likely routes of  
exposure : Ingestion  
Inhalation  
Skin contact  
Eye contact

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**Acute toxicity****Product:**

- Acute oral toxicity : LD50 (Rat, male): > 5.000 mg/kg  
Remarks: The toxicological data has been taken from products of similar composition.
- LD50 (Rat, female): 2.515 mg/kg  
Remarks: The toxicological data has been taken from products of similar composition.
- Acute inhalation toxicity : LC50 (Rat, male and female): > 2,61 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Assessment: The substance or mixture has no acute inhalation toxicity  
Remarks: The toxicological data has been taken from products of similar composition.
- Acute dermal toxicity : LD50 (Rat): > 2.000 mg/kg  
Assessment: The substance or mixture has no acute dermal toxicity  
Remarks: The toxicological data has been taken from products of similar composition.

**Components:****S-metolachlor:**

- Acute oral toxicity : LD50 (Rat, male and female): 2.672 mg/kg
- Acute inhalation toxicity : LC50 (Rat, male and female): > 2,91 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Assessment: The substance or mixture has no acute inhalation toxicity
- Acute dermal toxicity : LD50 (Rabbit): > 2.000 mg/kg  
Assessment: The substance or mixture has no acute dermal toxicity

**Tallow alkylamine ethoxylate:**

- Acute oral toxicity : Assessment: The component/mixture is moderately toxic after single ingestion.

**naphthalene:**

- Acute oral toxicity : Assessment: The component/mixture is moderately toxic after single ingestion.

**1,2,4-trimethylbenzene:**

- Acute inhalation toxicity : Assessment: The component/mixture is moderately toxic after short term inhalation.

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**Skin corrosion/irritation****Product:**

Species	: Rabbit
Result	: No skin irritation
Remarks	: The toxicological data has been taken from products of similar composition.

**Components:****S-metolachlor:**

Species	: Rabbit
Result	: No skin irritation

**Tallow alkylamine ethoxylate:**

Result	: Corrosive after 1 to 4 hours of exposure
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**1,2,4-trimethylbenzene:**

Assessment	: Irritating to skin.
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**Serious eye damage/eye irritation****Product:**

Species	: Rabbit
Result	: Eye irritation
Remarks	: The toxicological data has been taken from products of similar composition.

**Components:****S-metolachlor:**

Species	: Rabbit
Result	: No eye irritation

**Tallow alkylamine ethoxylate:**

Result	: Irreversible effects on the eye
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**1,2,4-trimethylbenzene:**

Assessment	: Irritating to eyes.
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**Respiratory or skin sensitisation****Product:**

Species	: Guinea pig
Result	: The product is a skin sensitiser, sub-category 1A.
Remarks	: Information given is based on data obtained from similar substances.



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**Components:****S-metolachlor:**

Species	:	Guinea pig
Result	:	The product is a skin sensitiser, sub-category 1B.

**Germ cell mutagenicity****Components:****S-metolachlor:**

Germ cell mutagenicity - Assessment	:	Animal testing did not show any mutagenic effects.
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**Carcinogenicity****Components:****S-metolachlor:**

Carcinogenicity - Assessment	:	Animal testing did not show any carcinogenic effects.
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**naphthalene:**

Carcinogenicity - Assessment	:	Limited evidence of carcinogenicity in animal studies
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**Reproductive toxicity****Components:****S-metolachlor:**

Reproductive toxicity - Assessment	:	Animal testing did not show any effects on fertility.
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**STOT - single exposure****Components:****1,2,4-trimethylbenzene:**

Assessment	:	The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.
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**Repeated dose toxicity****Components:****S-metolachlor:**

Remarks	:	The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
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**Aspiration toxicity****Components:****Solvent naphtha (petroleum), heavy arom.; Kerosine -unspecified:**

May be fatal if swallowed and enters airways.

**12. ECOLOGICAL INFORMATION****Ecotoxicity****Product:**

Toxicity to fish	:	LC50 (Cyprinus carpio (Carp)): 9,3 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 9,3 mg/l Exposure time: 48 h
Toxicity to algae	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): 0,1 mg/l Exposure time: 96 h  NOEC (Pseudokirchneriella subcapitata (green algae)): 0,01 mg/l End point: Growth rate Exposure time: 96 h

**Components:****S-metolachlor:**

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 1,23 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Americamysis): 1,4 mg/l Exposure time: 96 h
Toxicity to algae	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): 0,077 mg/l Exposure time: 96 h  NOEC (Pseudokirchneriella subcapitata (green algae)): 0,016 mg/l End point: Growth rate Exposure time: 96 h  EC50 (Lemna gibba (gibbous duckweed)): 0,023 mg/l Exposure time: 14 d  NOEC (Lemna gibba (gibbous duckweed)): 0,0076 mg/l Exposure time: 14 d
M-Factor (Acute aquatic toxicity)	:	10

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Toxicity to fish (Chronic toxicity) : NOEC (Pimephales promelas (fathead minnow)): 0,03 mg/l  
Exposure time: 35 d

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Americamysis): 0,13 mg/l  
Exposure time: 28 d

M-Factor (Chronic aquatic toxicity) : 10

**Solvent naphtha (petroleum), heavy arom.; Kerosine -unspecified:****Ecotoxicology Assessment**

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

**Tallow alkylamine ethoxylate:****Ecotoxicology Assessment**

Acute aquatic toxicity : Very toxic to aquatic life.

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

**nonylphenol ethoxylate propoxylate:****Ecotoxicology Assessment**

Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

**naphthalene:****Ecotoxicology Assessment**

Acute aquatic toxicity : Very toxic to aquatic life.

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

**1,2,4-trimethylbenzene:****Ecotoxicology Assessment**

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

**Persistence and degradability****Components:****S-metolachlor:**

Biodegradability : Result: Not readily biodegradable.

Stability in water : Degradation half life: 53 - 147 d  
Remarks: Product is not persistent.

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**Bioaccumulative potential****Components:****S-metolachlor:**

Bioaccumulation : Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: 3,05 (25 °C)

**Mobility in soil****Components:****S-metolachlor:**

Distribution among environmental compartments : Remarks: Moderately mobile in soils

Stability in soil : Dissipation time: 12 - 46 d  
Percentage dissipation: 50 % (DT50)  
Remarks: Product is not persistent.

**Other adverse effects**

No data available

**13. DISPOSAL CONSIDERATIONS****Disposal methods**

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

**14. TRANSPORT INFORMATION****International Regulations****UNRTDG**

UN number	: UN 3082
Proper shipping name	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (S-METOLACHLOR AND TALLOW ALKYLAMINE ETHOXYLATE)
Class	: 9

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Packing group : III  
Labels : 9

**IATA-DGR**

UN/ID No. : UN 3082  
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.  
(S-METOLACHLOR AND TALLOW ALKYLAMINE  
ETHOXYLATE)

Class : 9  
Packing group : III  
Labels : Miscellaneous  
Packing instruction (cargo aircraft) : 964  
Packing instruction (passenger aircraft) : 964  
Environmentally hazardous : yes

**IMDG-Code**

UN number : UN 3082  
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,  
N.O.S.  
(S-METOLACHLOR AND TALLOW ALKYLAMINE  
ETHOXYLATE)

Class : 9  
Packing group : III  
Labels : 9  
EmS Code : F-A, S-F  
Marine pollutant : yes

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable for product as supplied.

**Special precautions for user**

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

**15. REGULATORY INFORMATION****Safety, health and environmental regulations/legislation specific for the substance or mixture**

None known.

**16. OTHER INFORMATION****Full text of other abbreviations**

2000/39/EC : Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values  
91/322/EEC : Europe. Commission Directive 91/322/EEC on establishing indicative limit values  
ZA OEL : South Africa. Hazardous Chemical Substances Regulations,

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**Occupational Exposure Limits**

2000/39/EC / TWA	: Limit Value - eight hours
91/322/EEC / TWA	: Limit Value - eight hours
ZA OEL / TWA OEL-RL	: Long term occupational exposure limits - recommended limit
ZA OEL / STEL OEL-RL	: Short term occupational exposure limits - recommended limit

AICS - Australian Inventory of Chemical Substances; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; CPR - Controlled Products Regulations; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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