

**PENNANT MAGNUM**

Version 2.0      Revision Date: 05/05/2021      SDS Number: S22799952      This version replaces all previous versions.

**SECTION 1. IDENTIFICATION**

Product name : PENNANT MAGNUM  
Design code. : A9793D  
Product Registration number : 100-950

**Manufacturer or supplier's details**

Company name of supplier : Syngenta Crop Protection, LLC  
Address : Post Office Box 18300  
Greensboro NC 27419  
United States of America (USA)  
  
Telephone : 1 800 334 9481  
Telefax : 1 336 632 2192  
Emergency telephone : 1 800 888 8372

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

Recommended use : Herbicide  
Restrictions on use : General Use Pesticide

**SECTION 2. HAZARDS IDENTIFICATION****GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)**

Eye irritation : Category 2A  
Skin sensitization : Sub-category 1A  
Carcinogenicity : Category 2

**GHS label elements**

Hazard pictograms :



Signal Word : Warning  
Hazard Statements : H317 May cause an allergic skin reaction.  
H319 Causes serious eye irritation.  
H351 Suspected of causing cancer.  
Precautionary Statements : **Prevention:**  
P201 Obtain special instructions before use.

## PENNANT MAGNUM

Version 2.0      Revision Date: 05/05/2021      SDS Number: S22799952      This version replaces all previous versions.

P202 Do not handle until all safety precautions have been read and understood.  
 P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.  
 P264 Wash skin thoroughly after handling.  
 P272 Contaminated work clothing must not be allowed out of the workplace.  
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

### Response:

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P308 + P313 IF exposed or concerned: Get medical advice/ attention.  
 P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.  
 P337 + P313 If eye irritation persists: Get medical advice/ attention.  
 P363 Wash contaminated clothing before reuse.

### Storage:

P405 Store locked up.

### Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

### Other hazards

None known.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

### Components

Chemical name	CAS-No.	Concentration (% w/w)
S-metolachlor	87392-12-9	83.7145
solvent naphtha (petroleum), heavy arom.	64742-94-5	>= 5 - < 10
Amines, tallow alkyl, ethoxylated, compds. with polyethylene glycol hydrogen sulfate nonylphenyl ether	148373-01-7	>= 5 - < 10
naphthalene	91-20-3	>= 0.1 - < 1

Actual concentration is withheld as a trade secret

## SECTION 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 : Take the victim into fresh air.  
 If breathing is irregular or stopped, administer artificial respiration.

## PENNANT MAGNUM

Version 2.0      Revision Date: 05/05/2021      SDS Number: S22799952      This version replaces all previous versions.

- In case of skin contact : Keep patient warm and at rest.  
Call a physician or poison control center immediately.  
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 edema and pneumonitis.
- Notes to physician : There is no specific antidote available.  
Treat symptomatically.  
Do not induce vomiting: contains petroleum distillates and/or aromatic solvents.

### SECTION 5. FIRE-FIGHTING 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 fire fighting : As the product contains combustible organic ingredients, fire will produce dense black smoke containing hazardous products of combustion (see section 10).  
Exposure to decomposition products may be a hazard to health.
- Further information : 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 fire-fighters : Wear full protective clothing and self-contained breathing apparatus.

### SECTION 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.

## PENNANT MAGNUM

Version 2.0      Revision Date: 05/05/2021      SDS Number: S22799952      This version replaces all previous versions.

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.

### SECTION 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.  
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.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Ingredients 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.	64742-94-5	TWA	100 mg/m <sup>3</sup>	Supplier
		TWA	200 mg/m <sup>3</sup> (total hydrocarbon vapor)	ACGIH
naphthalene	91-20-3	TWA	10 ppm	ACGIH
		TWA	10 ppm 50 mg/m <sup>3</sup>	NIOSH REL
		ST	15 ppm 75 mg/m <sup>3</sup>	NIOSH REL
		TWA	10 ppm 50 mg/m <sup>3</sup>	OSHA Z-1
		TWA	10 ppm 50 mg/m <sup>3</sup>	OSHA P0
		STEL	15 ppm 75 mg/m <sup>3</sup>	OSHA P0

**Engineering measures** : THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION AND PACKAGING OF THE PRODUCT. FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

Containment and/or segregation is the most reliable technical protection measure if exposure cannot be eliminated.

## PENNANT MAGNUM

Version 2.0      Revision Date: 05/05/2021      SDS Number: S22799952      This version replaces all previous versions.

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

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 from 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 : Tightly fitting safety goggles  
 Always wear eye protection when the potential for inadvertent eye contact with the product cannot be excluded.

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.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Color : Golden

Odor : No data available

Odor Threshold : No data available

pH : No data available

Melting point/range : No data available

Boiling point/boiling range : No data available

**PENNANT MAGNUM**

Version 2.0      Revision Date: 05/05/2021      SDS Number: S22799952      This version replaces all previous versions.

---

Flash point	:	Method: Seta closed cup does not flash
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	No data available
Relative vapor density	:	No data available
Density	:	909 g/cm <sup>3</sup> (68 °F / 20 °C)
Solubility(ies)		
Water solubility	:	No data available
Solubility in other solvents	:	No data available
Partition coefficient: n- octanol/water	:	No data available
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available
Particle size	:	No data available

---

**SECTION 10. STABILITY AND REACTIVITY**

Reactivity	:	None reasonably foreseeable.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reac- tions	:	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.

**PENNANT MAGNUM**

Version 2.0      Revision Date: 05/05/2021      SDS Number: S22799952      This version replaces all previous versions.

**SECTION 11. TOXICOLOGICAL INFORMATION****Information on likely routes of exposure**

Ingestion  
Inhalation  
Skin contact  
Eye contact

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

- Acute oral toxicity : LD50 (Rat, female): 2,515 mg/kg  
Remarks: Based on data from similar materials
- 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: Based on data from similar materials
- Acute dermal toxicity : LD50 (Rabbit, male and female): > 2,000 mg/kg  
Assessment: The substance or mixture has no acute dermal toxicity  
Remarks: Based on data from similar materials

**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

**Amines, tallow alkyl, ethoxylated, compds. with polyethylene glycol hydrogen sulfate nonylphenyl ether :**

- 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.

**PENNANT MAGNUM**

Version 2.0      Revision Date: 05/05/2021      SDS Number: S22799952      This version replaces all previous versions.

---

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

Species : Rabbit  
Result : No skin irritation  
Remarks : Based on data from similar materials

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

Species : Rabbit  
Result : No skin irritation

**Amines, tallow alkyl, ethoxylated, compds. with polyethylene glycol hydrogen sulfate nonylphenyl ether :**

Result : Skin irritation

**Serious eye damage/eye irritation****Product:**

Species : Rabbit  
Result : Eye irritation  
Remarks : Based on data from similar materials

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

Species : Rabbit  
Result : No eye irritation

**Amines, tallow alkyl, ethoxylated, compds. with polyethylene glycol hydrogen sulfate nonylphenyl ether :**

Result : Irreversible effects on the eye

**Respiratory or skin sensitization****Product:**

Species : Guinea pig  
Result : The product is a skin sensitizer, sub-category 1A.  
Remarks : Based on data from similar materials

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

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



## PENNANT MAGNUM

Version 2.0      Revision Date: 05/05/2021      SDS Number: S22799952      This version replaces all previous versions.

### Germ cell mutagenicity

#### Components:

#### **S-metolachlor:**

Germ cell mutagenicity - Assessment : Animal testing did not show any mutagenic effects.

### Carcinogenicity

#### Components:

#### **S-metolachlor:**

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

#### **naphthalene:**

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

**IARC**      Group 2B: Possibly carcinogenic to humans  
naphthalene      91-20-3

**OSHA**      No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**NTP**      Reasonably anticipated to be a human carcinogen  
naphthalene      91-20-3

### Reproductive toxicity

#### Components:

#### **S-metolachlor:**

Reproductive toxicity - Assessment : Animal testing did not show any effects on fertility.

### Repeated dose toxicity

#### Components:

#### **S-metolachlor:**

Remarks : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

### Aspiration toxicity

#### Components:

**solvent naphtha (petroleum), heavy arom.:**

May be fatal if swallowed and enters airways.

## PENNANT MAGNUM

Version 2.0      Revision Date: 05/05/2021      SDS Number: S22799952      This version replaces all previous versions.

### SECTION 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/aquatic plants : ErC50 (Raphidocelis subcapitata (freshwater green alga)): 0.1 mg/l  
Exposure time: 96 h

NOEC (Raphidocelis subcapitata (freshwater green alga)): 0.01 mg/l  
End point: Growth rate  
Exposure time: 96 h

EC10 (Raphidocelis subcapitata (freshwater green alga)): 0.019 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/aquatic plants : ErC50 (Raphidocelis subcapitata (freshwater green alga)): 0.077 mg/l  
Exposure time: 96 h

NOEC (Raphidocelis subcapitata (freshwater green alga)): 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

Toxicity to fish (Chronic toxicity) : NOEC (Pimephales promelas (fathead minnow)): 0.03 mg/l  
Exposure time: 35 d

**PENNANT MAGNUM**

Version 2.0      Revision Date: 05/05/2021      SDS Number: S22799952      This version replaces all previous versions.

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.:**

**Ecotoxicology Assessment**

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

**Amines, tallow alkyl, ethoxylated, compds. with polyethylene glycol hydrogen sulfate nonylphenyl ether :**

**Ecotoxicology Assessment**

Chronic aquatic toxicity : Toxic 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.

**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.

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

Bioaccumulation : Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: 3.05 (77 °F / 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.

**PENNANT MAGNUM**

Version 2.0      Revision Date: 05/05/2021      SDS Number: S22799952      This version replaces all previous versions.

**Other adverse effects**

No data available

**SECTION 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.

**SECTION 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  
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

## PENNANT MAGNUM

Version 2.0      Revision Date: 05/05/2021      SDS Number: S22799952      This version replaces all previous versions.

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.

### Domestic regulation

#### 49 CFR

UN/ID/NA number : NA 3082  
Proper shipping name : Other regulated substances, liquid, n.o.s. (NAPHTHALENE)  
Class : 9  
Packing group : III  
Labels : CLASS 9  
ERG Code : 171  
Marine pollutant : yes  
Remarks : Shipment by ground under DOT is non-regulated; however it may be shipped per the applicable hazard classification to facilitate multi-modal transport involving ICAO (IATA) or IMO.

### 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.

## SECTION 15. REGULATORY INFORMATION

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

#### Caution

Causes moderate eye irritation.  
Harmful if swallowed.  
Harmful if absorbed through skin.  
Avoid contact with skin, eyes or clothing.  
May cause skin sensitization reactions in certain individuals.

#### CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
naphthalene	91-20-3	100	13869

#### SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

#### SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : Flammable (gases, aerosols, liquids, or solids)  
Respiratory or skin sensitization  
Carcinogenicity  
Serious eye damage or eye irritation

## PENNANT MAGNUM

Version 2.0      Revision Date: 05/05/2021      SDS Number: S22799952      This version replaces all previous versions.

**SARA 313** : The following components are subject to reporting levels established by SARA Title III, Section 313:

naphthalene      91-20-3       $\geq 0.1 - < 1\%$

**The ingredients of this product are reported in the following inventories:**

TSCA : Product contains substance(s) not listed on TSCA inventory.

### TSCA list

No substances are subject to a Significant New Use Rule.

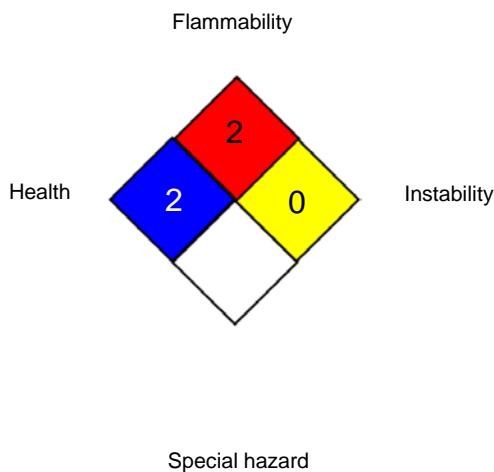
The following substance(s) is/are subject to TSCA 12(b) export notification requirements:

Amines, tallow alkyl, ethoxylated, compds. with polyethylene 148373-01-7  
glycol hydrogen sulfate nonylphenyl ether

## SECTION 16. OTHER INFORMATION

### Further information

#### NFPA 704:



#### HMIS® IV:

HEALTH	*	2
FLAMMABILITY		2
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "\*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

### Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)  
 NIOSH REL : USA. NIOSH Recommended Exposure Limits  
 OSHA P0 : USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000  
 OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants  
 ACGIH / TWA : 8-hour, time-weighted average  
 NIOSH REL / TWA : Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek  
 NIOSH REL / ST : STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday

## PENNANT MAGNUM

Version	Revision Date:	SDS Number:	This version replaces all previous versions.
2.0	05/05/2021	S22799952	

OSHA P0 / TWA	:	8-hour time weighted average
OSHA P0 / STEL	:	Short-term exposure limit
OSHA Z-1 / TWA	:	8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; 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; HMIS - Hazardous Materials Identification System; 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; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; 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

Revision Date : 05/05/2021

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

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.

US / Z8