

## SAFETY DATA SHEET

### Section 1: IDENTIFICATION

<b>Product Name:</b>	<b>PREEGLONE</b>
<b>Design Code:</b>	A12984A
<b>Recommended Use:</b>	<b>Herbicide</b>
<b>Company Details:</b>	<b>Syngenta Crop Protection Limited</b>
<b>Address:</b>	<b>Tower II, Level 7, 110 Symonds Street</b> <b>Private Bag 92618,</b> <b>Symonds Street</b> <b>AUCKLAND</b> <b>NEW ZEALAND</b>
<b>Telephone number:</b>	<b>(weekdays) 09 306 1500</b>
<b>Emergency Telephone number:</b>	<b>(24 Hours) 0800 734 607</b>
<b>National Poisons &amp; Hazchem Information Centre :</b>	<b>0800 POISON (0800 764 766)</b>

### Section 2: HAZARDS IDENTIFICATION

<b>Hazard classification:</b>	6.1A, 6.3A, 6.4A, 6.5B, 6.9A, 9.1A, 9.3A, 9.4B
<b>Priority Identifier:</b>	DANGER KEEP OUT OF REACH OF CHILDREN
<b>Secondary Identifiers:</b>	6.1A = Fatal if swallowed, inhaled or absorbed through the skin. 6.3A = Causes skin irritation 6.4A = Causes serious eye irritation 6.5B = May cause an allergic skin reaction. 6.9A = May cause eye and organ damage from repeated oral exposure at high doses. 9.1A = Very toxic to aquatic organisms. 9.3A = Very toxic to terrestrial vertebrates. 9.4B = Toxic to terrestrial invertebrates.

### Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

<b>Mixture:</b>		
<b>Chemical Identity of ingredients:</b>		
<b>Ingredient</b>	<b>CAS no.</b>	<b>Content (% w/v)</b>
Paraquat (present as paraquat dichloride)	1910-42-5 (paraquat dichloride)	>= 10 - < 20 (paraquat dichloride) to give
Diquat (present as diquat dibromide)	4685-14-7 (paraquat) 85-00-7 (diquat dibromide)	13.5 (paraquat) >= 10 - < 20 (diquat dibromide) to give
other ingredients determined not to be hazardous	2764-72-9 (diquat) -	11.5 (diquat) to 100%

### Section 4: FIRST AID MEASURES

<b>Description of First Aid measures:</b>	
<b>General Advice:</b>	For advice contact the National Poisons Centre on 0800 POISON (0800 764 766) or a doctor immediately. Begin artificial respiration if the victim is not breathing. Use mouth to nose rather than mouth to mouth. Obtain medical attention.

**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 Doctor or the National Poisons 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 doctor.  
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 (if present).  
Immediate medical attention is required.

**If swallowed:** SPEED IS ESSENTIAL.  
Immediate medical attention is required.  
If available, give an adsorbent such as activated charcoal, bentonite or Fullers Earth.

**Important symptoms and effects, both acute and delayed:**

**Symptoms:** Symptoms include inflammation of mouth, throat and oesophagus, gastrointestinal discomfort and diarrhoea.

Mild poisoning occurs at < 20 mg paraquat ion/kg body weight and the effects are vomiting and diarrhoea.

Moderate to severe poisoning occurs at 20 – 30 mg paraquat ion/kg body weight and the effects are vomiting, abdominal discomfort, soreness and inflammation of the mouth, throat and oesophagus, difficulty in swallowing and, later, diarrhoea. Ulceration of the lips, mouth, throat and intestine may follow within 24 – 48 hours. Kidney and liver damage may appear 1 – 3 days after exposure. Can cause death by a delayed proliferating fibrosis of the lung within 1 – 3 weeks.

Lethal poisoning occurs at > 30 mg paraquat ion/kg body weight and the effects are nausea and vomiting, and can cause death by multi-organ failure and circulatory collapse within 48 hours.

**Indication of any immediate medical attention and special treatment needed:**

**RAPID TREATMENT IS ESSENTIAL.**  
Refer to the booklet 'Paraquat Poisoning. A Practical Guide to Diagnosis, First Aid and Hospital Treatment' ([www.syngenta.com/pqmedguide/](http://www.syngenta.com/pqmedguide/)).

Treatment: Ensure airway, breathing and circulation are intact.  
Administer either:  
activated charcoal (100 g for adults or 2 g/kg body weight in children)  
OR  
Fuller's Earth (15% solution - 1 litre for adults or 15 mL/kg body weight in children)  
NOTE: The use of gastric lavage without administration of an adsorbent has not shown any clinical benefit.

DO NOT use supplemental oxygen.

Eye splashes from concentrated material should be treated by an eye specialist after initial treatment.  
With the possibility of late onset of corneal ulceration it is advised that patients with paraquat eye injuries are reviewed by a specialist the day after first presentation.

## Section 5: FIRE-FIGHTING MEASURES

### **Extinguishing media:**

<b>Suitable extinguishing media:</b>	Small fires: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Large Fires: Alcohol resistant foam or water spray.
<b>Unsuitable extinguishing media:</b>	Do not use a solid water stream as it may scatter and spread fire.

### **Special hazards arising from the substance or mixture:**

<b>Specific hazards during fire-fighting:</b>	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.
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### **Advice for firefighters:**

<b>Special protective equipment for firefighters:</b>	Wear full protective clothing and self-contained breathing apparatus.
<b>Hazchem Code:</b>	2X
<b>Further information:</b>	Do not allow run-off from fire fighting to enter drains or water courses. Cool closed containers exposed to fire with water spray.

## 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.

### **Methods and material 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.

### **Reference to other sections:**

Refer to disposal considerations listed in Section 13.  
Refer to protective measures listed in sections 7 and 8.

## Section 7: HANDLING AND STORAGE

### **Precautions for Safe handling:**

<b>Advice on safe handling:</b>	Avoid contact with skin and eyes. When using do not eat, drink or smoke. For personal protection see section 8. Spray solutions should not be mixed, stored or applied in containers other than plastic, plastic-lined steel, stainless steel or fiberglass.
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**Conditions for safe storage, including any incompatibilities:**

**Requirements for storage area and containers:**

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 feeding stuffs and under lock and key.

**Specific end use(s)**

**Specific use(s)**

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

**Section 8: EXPOSURE CONTROL / PERSONAL PROTECTION**

**Control Parameters**

**Occupational Exposure Limits:**

Components	CAS No	Value type (form of exposure)	Control parameters	Basis
Paraquat	4685-14-7	TWA (respirable dust)	0.1 mg/m <sup>3</sup>	WES
Diquat dibromide	85-00-7	TWA	0.05 mg/m <sup>3</sup>	WES
Diquat	2764-72-9	TWA	0.05 mg/m <sup>3</sup>	WES

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

**Personal Protective Protection:**

**Eye protection:**

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

**Hand protection:**

**Material:**

Impervious, such as nitrile rubber.

**Break through time:**

>480 min

**Glove thickness:**

0.5 mm

**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 break through 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.

**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.

<b>Respiratory protection:</b>	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Suitable respiratory equipment: Respirator with a particle filter The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.
<b>Filter type:</b>	Particulates type (P)
<b>Protective measures:</b>	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.

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

### *Information on basic physical and chemical properties:*

<b>Appearance:</b>	Clear liquid
<b>Colour:</b>	Dark green/blue
<b>Odour:</b>	Pungent, characteristic of pyridine base
<b>Odour threshold:</b>	No data
<b>pH value</b>	5 – 6.5, concentration: 1 % w/v
<b>Melting point / freezing point:</b>	No data
<b>Initial boiling point and boiling range:</b>	100°C
<b>Flash point:</b>	Does not flash (aqueous)
<b>Flammability:</b>	Not classified as a flammability hazard
<b>Upper flammability / explosive limits:</b>	No data
<b>Lower flammability / explosive limits</b>	No data
<b>Vapour pressure:</b>	No data
<b>Vapour Density:</b>	No data
<b>Density:</b>	1.15 - 1.18 g/cm <sup>3</sup>
<b>Solubility in other solvents:</b>	Soluble in water
<b>Partition co-efficient: n-octanol / water:</b>	log Pow: -4.5 (20°C) (paraquat) log Pow: -4.6 (20°C) (diquat)
<b>Autoignition temperature</b>	No data
<b>Decomposition temperature:</b>	No data
<b>Dynamic viscosity:</b>	No data
<b>Explosive properties:</b>	Not explosive
<b>Oxidising properties:</b>	The substance or mixture is not classified as oxidizing
<b>Surface tension:</b>	No data
<b>Minimum ignition energy:</b>	No data

## Section 10: STABILITY AND REACTIVITY

### **Reactivity:**

See Section: "Possibility of Hazardous Reactions".

### **Chemical Stability:**

The product is stable when used in normal conditions.

### **Possibility of Hazardous Reactions:**

Hazardous reactions: Corrosive in contact with metals.

### **Conditions to Avoid**

No decomposition if used as directed.

**Incompatible Materials:**

Materials to avoid: aluminium  
 mild steel  
 iron

**Hazardous Decomposition Products:**

Combustion or thermal decomposition will evolve toxic and irritant vapours.

**Section 11: TOXICOLOGICAL INFORMATION**

**HSNO Classifications:**

- 6.1A = Fatal if swallowed, inhaled or absorbed through the skin.
- 6.3A = Causes skin irritation
- 6.4A = Causes serious eye irritation
- 6.5B = May cause an allergic skin reaction.
- 6.9A = May cause eye and organ damage from repeated oral exposure at high doses.

**Acute toxicity (Product)**

Swallowed:	LD <sub>50</sub>	Acute toxicity estimate: 532.27 mg/kg Method: Calculation method Remarks: Lethal dose for man is approximately 4-6g of diquat (equivalent to approximately 60mg/kg). May cause nausea, vomiting, abdominal pain and diarrhoea within a few hours of swallowing. Ulceration of lips, mouth, throat and intestine may follow within 24-48 hours. Kidney failure and liver damage may occur; in severe cases circulatory collapse; coma or death/cardiac arrest.
Dermal absorption:	LD <sub>50</sub>	>2000 mg/kg (rat) Method: Calculation method
Inhaled:	LC <sub>50</sub> (4 h)	0.04 mg/L (Rat) Method: Calculation method
Aspiration hazard:		Not classified
Respiratory irritation:		Not classified
Skin corrosion / irritation:		<b>IRRITANT</b> (rabbit)
Eye damage / irritation:		<b>IRRITANT</b> (rabbit) Remarks: Diquat dibromide has a delayed eye irritation effect. May lead to ulceration of cornea and conjunctival epithelium giving rise to secondary infection. Although healing may be slow, the injury is superficial and with proper medical care recovery will be complete, even in severe cases.
Respiratory or Skin Sensitisation:		<b>SKIN SENSITISER</b> (guinea pigs)

**Chronic / Long Term Effects (active ingredients)**

Germ cell mutagenicity:	Animal testing did not show any mutagenic effects.
Carcinogenicity:	No evidence of carcinogenicity in animal studies.
Reproductive toxicity:	No toxicity to reproduction.
Specific Organ toxicity:	<i>Single exposure:</i> The substance or mixture is classified as specific target organ toxicant, single exposure (GHS: category 3) with respiratory tract irritation. <i>Repeated exposure:</i> The substance or mixture is classified as specific target organ toxicant, repeated exposure, Class 6.9A (GHS: category 1). May cause eye and organ damage from repeated oral exposure at high doses.
Narcotic Effects:	Not classified

## Section 12: ECOLOGICAL INFORMATION

<b>HSNO Classifications:</b>	
9.1A =	Very toxic to aquatic organisms.
9.3A =	Very toxic to terrestrial vertebrates.
9.4B =	Toxic to terrestrial invertebrates.
<b>Ecotoxicity Effects – Aquatic (paraquat)</b>	
<b>Acute toxicity to fish:</b>	LC <sub>50</sub> (96h) = 18.6 mg/L ( <i>Oncorhynchus mykiss</i> (rainbow trout))
<b>Toxicity to daphnia and other aquatic invertebrates:</b>	EC <sub>50</sub> (48h) = 4.4 mg/L ( <i>Daphnia magna</i> (water flea))
<b>Toxicity to algae:</b>	E <sub>r</sub> C <sub>50</sub> (96 h) = 0.20 mg/L ( <i>Pseudokirchneriella subcapitata</i> (green algae))
<b>Toxicity to Birds:</b>	LD <sub>50</sub> = 698 mg/kg (Japanese quail) (as paraquat ion) LD <sub>50</sub> = 711 mg/kg (bobwhite quail) (as paraquat ion)
<b>Toxicity to soil dwelling organisms:</b>	LC <sub>50</sub> (14 days) = 262-380 mg/kg (earthworms)
<b>Toxicity to Bees:</b>	LD <sub>50</sub> (72 h, oral) = 36 µg/bee LD <sub>50</sub> (72 h, contact) = 150 µg/bee
<b>Ecotoxicity Effects – Terrestrial (diquat)</b>	
<b>Acute toxicity to fish:</b>	LC <sub>50</sub> (96 h) = 5.6 mg/L ( <i>Oncorhynchus mykiss</i> (rainbow trout)) (Calculated, as diquat ion)
<b>Toxicity to daphnia and other aquatic invertebrates:</b>	EC <sub>50</sub> (48h) = 1.34 mg/L ( <i>Daphnia magna</i> (water flea)) (Calculated, as diquat ion)
<b>Toxicity to algae:</b>	E <sub>r</sub> C <sub>50</sub> (96 h) = 0.0006 mg/L ( <i>Navicula pelliculosa</i> (Freshwater diatom)) (Calculated, as diquat ion)
<b>Toxicity to Birds:</b>	LD <sub>50</sub> = 155 mg/kg (mallard ducks) (active ingredient) LD <sub>50</sub> = 295 mg/kg (partridges) (active ingredient)
<b>Toxicity to soil dwelling organisms:</b>	LC <sub>50</sub> (14 days) = 243 mg/kg (earthworms) (active ingredient)
<b>Toxicity to Bees:</b>	LD <sub>50</sub> (120h, oral) = 22 µg/bee (active ingredient)
<b>Persistence and degradability:</b>	
<b>Biodegradability:</b>	Paraquat: Not readily biodegradable. Diquat: Not readily biodegradable.
<b>Stability in water:</b>	Paraquat: Degradation half-life (DT <sub>50</sub> ): >30 d (clean water) Persistent in clean water Degradation half-life (DT <sub>50</sub> ): <0.25 d (water-sediment systems) Not persistent in water containing sediment or suspended solids. Diquat: Degradation half-life (DT <sub>50</sub> ): >30 d Persistent in water.
<b>Bioaccumulative potential:</b>	
<b>Bioaccumulation:</b>	Paraquat: Does not bioaccumulate. Diquat: Low bioaccumulation potential.
<b>Mobility in soil:</b>	
<b>Distribution among environmental compartments:</b>	Paraquat: Immobile in soil. Diquat: Immobile in soils

<b>Stability in soil:</b>	<p>Paraquat: DT<sub>50</sub>: 20 y Percentage dissipation: 50% Persistent in soil. Strong adsorption of paraquat to soil minerals and organic matter.</p> <p>Diquat: DT<sub>50</sub>: 11 – 41 y Percentage dissipation: 50% Persistent in soil.</p>
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<b>Other adverse effects: Results of PBT and vPvB assessment (product):</b>	<p>This substance/mixture contains no components considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB) at levels of 0.1% or higher.</p>
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### Section 13: DISPOSAL CONSIDERATIONS

<b>Product Disposal:</b>	<p>DO NOT contaminate ponds, waterways or ditches with chemical or used containers. DO NOT dispose of waste into sewer. Dispose of this product only by using according to the label. Otherwise, dispose of waste at an approved landfill or other approved facility that will ensure the substance does not exceed the tolerable exposure limit (TEL) or environmental exposure limit (EEL), where relevant, or will treat the substance so that it is rendered no longer hazardous.</p>
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<b>Container Disposal:</b>	<p>Ensure the container is empty. Triple rinse empty container and add rinsate to the spray tank. Recycle empty container through Agrecovery (0800 247 326, www.agrecovery.co.nz). Otherwise crush and bury in a suitable landfill. DO NOT reuse this container for any other purpose.</p>
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### Section 14: TRANSPORT INFORMATION

<b>Rail / Road (NZS 5433)</b>	<p>UN-No: 3016 Class: 6 Packaging Group: III Proper shipping name: BIPYRIDILIUM PESTICIDES, LIQUID, TOXIC N.O.S. (Paraquat and Diquat)</p>
<b>Sea (IMDG-Code)</b>	<p>UN-No: 3016 Class: 6 Packaging Group: III Proper shipping name: BIPYRIDILIUM PESTICIDES, LIQUID, TOXIC N.O.S. (Paraquat and Diquat) EmS Code: F-A, S-A MARINE POLLUTANT: Yes</p>
<b>Air (IATA)</b>	<p>UN-No: 3016 Class: 6 Packaging Group: III Proper shipping name: BIPYRIDILIUM PESTICIDES, LIQUID, TOXIC N.O.S. (Paraquat and Diquat) Packing instruction: 663 (cargo aircraft) Packing instruction: 655 (passenger aircraft) Packing instruction (LQ): Y642 (cargo and passenger aircraft)</p>



## Section 15: REGULATORY INFORMATION

<b>HSNO Approval Number:</b>	HSR000447
<b>Tolerable Exposure Limit or Environmental Exposure Limit:</b>	No TEL or EEL values are set for this substance at this time
<b>Required Regulatory Controls:</b>	
<b>Certified handler:</b>	Yes
<b>Tracking:</b>	Yes
<b>Record Keeping:</b>	Yes, 9.1A substance
<b>ACVM Registration:</b>	P 1061
<b>ACVM Controls:</b>	See <a href="http://www.foodsafety.govt.nz">www.foodsafety.govt.nz</a> for registration conditions.
<b>International Agreements related to the substance (eg, Montreal Protocol, Stockholm Convention or Rotterdam Convention):</b>	Not applicable

## Section 16: OTHER INFORMATION

<b>Date of SDS Preparation / Review:</b>	11 October 2021
<b>Version number of SDS:</b>	6
<b>Key / Legend to abbreviations and acronyms used:</b>	
<p>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;          KECL - 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);</p>	
<p>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;          WES – Workplace Exposure Standard (Worksafe NZ);          WHMIS - Workplace Hazardous Materials Information System</p>	
<p>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 test.</p>	
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