

# SAFETY DATA SHEET



## VC-20

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### Section 1: Identification

**Product identifier** : VC-20

SDS-Identcode : 130000001241

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

Recommended use : Processing aid  
Curing chemical

Restrictions on use : For industrial use only.  
Do not use or resell Chemours™ materials in medical applications involving implantation in the human body or contact with internal body fluids or tissues unless agreed to by Seller in a written agreement covering such use. For further information, please contact your Chemours representative.

#### Manufacturer or supplier's details

Company : The Chemours Company Singapore PTE. LTD.

Address : 1 HarbourFront Place, #16-01 HarbourFront Tower One  
Singapore 098633

Telephone : 65-6715-8688

Emergency telephone number : 1800 315 8134

Telefax : 65-6715-8697

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### Section 2: Hazard identification

#### Classification of the substance or mixture

Acute toxicity (Oral) : Category 3

Acute toxicity (Inhalation) : Category 2

Serious eye damage/eye irritation : Category 1

Specific target organ toxicity - single exposure : Category 3

Specific target organ toxicity - repeated exposure : Category 1 (Lungs, nasal cavity)

Short-term (acute) aquatic : Category 1

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hazard

Long-term (chronic) aquatic hazard : Category 1

### GHS Label elements, including precautionary statements

Hazard pictograms :

Signal word : Danger

Hazard statements : H301 Toxic if swallowed.  
H318 Causes serious eye damage.  
H330 Fatal if inhaled.  
H335 May cause respiratory irritation.  
H372 Causes damage to organs (Lungs, nasal cavity) through prolonged or repeated exposure.  
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**  
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or in a well-ventilated area.  
P273 Avoid release to the environment.  
P280 Wear eye protection/ face protection.  
P284 Wear respiratory protection.  
**Response:**  
P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth.  
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.  
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.  
P314 Get medical advice/ attention if you feel unwell.  
P391 Collect spillage.  
**Storage:**  
P405 Store locked up.  
**Disposal:**  
P501 Dispose of contents/ container to an approved waste disposal plant.

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**Other hazards which do not result in classification**

None known.

**Section 3: Composition/information on ingredients**

Substance / Mixture : Mixture

**Components**

Chemical name	CAS-No.	Concentration (% w/w)
Benzyltriphenylphosphonium chloride	1100-88-5	>= 30 -< 50
Limestone	1317-65-3	>= 1 -< 10

**Section 4: First-aid measures****Description of necessary first-aid measures**

General advice	: In the case of accident or if you feel unwell, seek medical advice immediately. When symptoms persist or in all cases of doubt seek medical advice.
If inhaled	: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
In case of skin contact	: In case of contact, immediately flush skin with soap and plenty of water. Get medical attention if symptoms occur.
In case of eye contact	: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lens, if worn. Get medical attention immediately.
If swallowed	: If swallowed, DO NOT induce vomiting unless directed to do so by medical personnel. Call a physician or poison control centre immediately. Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person.

**Most important symptoms and effects, both acute and delayed**

Risks	: Toxic if swallowed. Causes serious eye damage. Fatal if inhaled. May cause respiratory irritation. Causes damage to organs through prolonged or repeated exposure.
Protection of first-aiders	: First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment

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when the potential for exposure exists (see section 8).

## Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically and supportively.

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## Section 5: Fire-fighting measures

### Extinguishing media

Suitable extinguishing media : Water spray  
Alcohol-resistant foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry chemical

Unsuitable extinguishing media : None known.

### Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Exposure to combustion products may be a hazard to health.

Hazardous combustion products : Carbon oxides  
Fluorine compounds  
Oxides of phosphorus  
Chlorine compounds  
Metal oxides

### Special protective actions for fire-fighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.  
Use personal protective equipment.

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
Use water spray to cool unopened containers.  
Remove undamaged containers from fire area if it is safe to do so.  
Evacuate area.

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## Section 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Personal precautions : Evacuate personnel to safe areas.  
Only trained personnel should re-enter the area.  
Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).

### Environmental precautions

Environmental precautions : Avoid release to the environment.  
Prevent further leakage or spillage if safe to do so.

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Retain and dispose of contaminated wash water.  
Local authorities should be advised if significant spillages cannot be contained.

**Methods and materials for containment and cleaning up**

Methods for cleaning up : Surround spill with absorbents and place a damp covering over the area to minimise entry of the material into the air. Add excess liquid to allow the material to enter into solution. Soak up with inert absorbent material. Clean up remaining materials from spill with suitable absorbent.

Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

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**Section 7: Handling and storage****Precautions for safe handling**

Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation : If sufficient ventilation is unavailable, use with local exhaust ventilation.

Advice on safe handling : Do not breathe dust, fume, gas, mist, vapours or spray.  
Do not swallow.  
Do not get in eyes.  
Avoid prolonged or repeated contact with skin.  
Wash skin thoroughly after handling.  
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment  
Keep container tightly closed.  
Already sensitised individuals, and those susceptible to asthma, allergies, chronic or recurrent respiratory disease, should consult their physician regarding working with respiratory irritants or sensitisers.  
Do not eat, drink or smoke when using this product.  
Take care to prevent spills, waste and minimize release to the environment.

Hygiene measures : If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place.  
When using do not eat, drink or smoke.  
Wash contaminated clothing before re-use.

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### Conditions for safe storage, including any incompatibilities

Conditions for safe storage : Keep in properly labelled containers.  
Store locked up.  
Keep tightly closed.  
Keep in a cool, well-ventilated place.  
Store in accordance with the particular national regulations.

Materials to avoid : Do not store with the following product types:  
Explosives

## Section 8: Exposure controls/personal protection

### Control parameters

### Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Limestone	1317-65-3	PEL (long term)	10 mg/m <sup>3</sup> (Calcium carbonate)	SG OEL

**Appropriate engineering control measures** : Minimize workplace exposure concentrations.  
If sufficient ventilation is unavailable, use with local exhaust ventilation.

### Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection : Wear the following personal protective equipment:  
Chemical resistant goggles must be worn.  
If splashes are likely to occur, wear:  
Face-shield

Skin protection : Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.  
Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).

Respiratory protection : If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.

Filter type : Particulates type

Hand protection  
Material : Nitrile rubber  
Glove thickness : 0.38 mm  
Wearing time : 480 min

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Remarks : Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday. Breakthrough time is not determined for the product. Change gloves often!

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### Section 9: Physical and chemical properties

Appearance	: pellets
Colour	: white, opaque
Odour	: slight
Odour Threshold	: No data available
pH	: 5.5
Melting point/freezing point	: No data available
Initial boiling point and boiling range	: No data available
Flash point	: Not applicable
Evaporation rate	: Not applicable
Flammability (solid, gas)	: No data available
Upper explosion limit / Upper flammability limit	: No data available
Lower explosion limit / Lower flammability limit	: No data available
Vapour pressure	: Not applicable
Relative vapour density	: Not applicable
Relative density	: 1.5
Solubility(ies)	

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Water solubility	: slightly soluble
Partition coefficient: n-octanol/water	: Not applicable
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	
Viscosity, kinematic	: Not applicable
Explosive properties	: Not explosive
Oxidizing properties	: The substance or mixture is not classified as oxidizing.
Particle characteristics	
Particle size	: No data available

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### Section 10: Stability and reactivity

Reactivity	: Not classified as a reactivity hazard.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: None known.
Conditions to avoid	: None known.
Incompatible materials	: None.
Hazardous decomposition products	: No hazardous decomposition products are known.

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### Section 11: Toxicological information

Information on likely routes of exposure	: Skin contact Ingestion Eye contact
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#### Acute toxicity

Toxic if swallowed.  
Fatal if inhaled.

#### Product:

Acute oral toxicity	: Acute toxicity estimate: 131.06 mg/kg Method: Calculation method
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Acute inhalation toxicity : Acute toxicity estimate: 0.1524 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: Calculation method

### **Components:**

#### **Benzyltriphenylphosphonium chloride:**

Acute oral toxicity : LD50 (Rat, male): 43 mg/kg

Acute inhalation toxicity : LC50 (Rat, male): > 0.08 - 0.2 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist

#### **Limestone:**

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg  
Method: OECD Test Guideline 420  
Assessment: The substance or mixture has no acute oral toxicity  
Remarks: Based on data from similar materials

Acute inhalation toxicity : LC50 (Rat): > 3 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
Assessment: The substance or mixture has no acute inhalation toxicity  
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg  
Method: OECD Test Guideline 402  
Assessment: The substance or mixture has no acute dermal toxicity  
Remarks: Based on data from similar materials

### **Skin corrosion/irritation**

Not classified based on available information.

### **Components:**

#### **Benzyltriphenylphosphonium chloride:**

Species : Rabbit  
Result : No skin irritation

#### **Limestone:**

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : No skin irritation  
Remarks : Based on data from similar materials

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## Serious eye damage/eye irritation

Causes serious eye damage.

### Components:

#### **Benzyltriphenylphosphonium chloride:**

Species	:	Rabbit
Result	:	Irreversible effects on the eye
Result	:	Toxic by eye contact.

#### **Limestone:**

Species	:	Rabbit
Result	:	No eye irritation
Method	:	OECD Test Guideline 405
Remarks	:	Based on data from similar materials

## Respiratory or skin sensitisation

### **Skin sensitisation**

Not classified based on available information.

### **Respiratory sensitisation**

Not classified based on available information.

### Components:

#### **Benzyltriphenylphosphonium chloride:**

Test Type	:	Maximisation Test
Exposure routes	:	Skin contact
Species	:	Guinea pig
Result	:	negative

#### **Limestone:**

Test Type	:	Local lymph node assay (LLNA)
Exposure routes	:	Skin contact
Species	:	Mouse
Method	:	OECD Test Guideline 429
Result	:	negative
Remarks	:	Based on data from similar materials

## Germ cell mutagenicity

Not classified based on available information.

### Components:

#### **Benzyltriphenylphosphonium chloride:**

Genotoxicity in vitro	:	Test Type: Bacterial reverse mutation assay (AMES)
		Method: OECD Test Guideline 471
		Result: negative

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## Limestone:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: negative  
Remarks: Based on data from similar materials

Test Type: Chromosome aberration test in vitro  
Method: OECD Test Guideline 473  
Result: negative  
Remarks: Based on data from similar materials

Test Type: In vitro mammalian cell gene mutation test  
Method: OECD Test Guideline 476  
Result: negative  
Remarks: Based on data from similar materials

## Carcinogenicity

Not classified based on available information.

## Reproductive toxicity

Not classified based on available information.

## Components:

### Limestone:

Effects on fertility : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test  
Species: Rat  
Application Route: Ingestion  
Method: OECD Test Guideline 422  
Result: negative  
Remarks: Based on data from similar materials

Effects on foetal development : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test  
Species: Rat  
Application Route: Ingestion  
Method: OECD Test Guideline 422  
Result: negative  
Remarks: Based on data from similar materials

## STOT - single exposure

May cause respiratory irritation.

## Components:

### Benzyltriphenylphosphonium chloride:

Assessment : May cause respiratory irritation.

## STOT - repeated exposure

Causes damage to organs (Lungs, nasal cavity) through prolonged or repeated exposure.

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**Components:****Benzyltriphenylphosphonium chloride:**

Exposure routes	: Inhalation
Target Organs	: Lungs, nasal cavity
Assessment	: Shown to produce significant health effects in animals at concentrations of 0.02 mg/l/6h/d or less.

**Repeated dose toxicity****Components:****Benzyltriphenylphosphonium chloride:**

Species	: Rat, male
NOAEL	: 0.0051 mg/l
LOAEL	: 0.015 mg/l
Application Route	: inhalation (dust/mist/fume)
Exposure time	: 2 Weeks

**Limestone:**

Species	: Rat
NOAEL	: > 300 mg/kg
Application Route	: Ingestion
Exposure time	: 28 Days
Method	: OECD Test Guideline 422
Remarks	: Based on data from similar materials

**Aspiration toxicity**

Not classified based on available information.

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**Section 12: Ecological information****Toxicity****Components:****Benzyltriphenylphosphonium chloride:**

Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): 1 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	: ErC50 (Pseudokirchneriella subcapitata (green algae)): 0.59 mg/l Exposure time: 72 h Method: OECD Test Guideline 201  EC10 (Pseudokirchneriella subcapitata (green algae)): 0.25 mg/l Exposure time: 72 h Method: OECD Test Guideline 201

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M-Factor (Acute aquatic toxicity) : 1

M-Factor (Chronic aquatic toxicity) : 1

### **Limestone:**

Toxicity to fish : LL50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l  
Exposure time: 96 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 203  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : LL50 (Daphnia magna (Water flea)): > 100 mg/l  
Exposure time: 48 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 202  
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : EL50 (Desmodesmus subspicatus (green algae)): > 14 mg/l  
Exposure time: 72 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 201  
Remarks: No toxicity at the limit of solubility  
Based on data from similar materials

EL10 (Desmodesmus subspicatus (green algae)): > 14 mg/l  
Exposure time: 72 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 201  
Remarks: No toxicity at the limit of solubility  
Based on data from similar materials

Toxicity to microorganisms : EC50: > 100 mg/l  
Exposure time: 3 h  
Method: OECD Test Guideline 209  
Remarks: Based on data from similar materials

### **Persistence and degradability**

#### **Components:**

#### **Benzyltriphenylphosphonium chloride:**

Biodegradability : Result: Not readily biodegradable.  
Biodegradation: 1 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301D

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## Bioaccumulative potential

### Components:

#### **Benzyltriphenylphosphonium chloride:**

Partition coefficient: n-octanol/water	: log Pow: -0.7 Method: OECD Test Guideline 107
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#### **Mobility in soil**

No data available

#### **Other adverse effects**

No data available

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## Section 13: Disposal considerations

### **Disposal methods**

Waste from residues	: Do not dispose of waste into sewer.  Dispose of in accordance with local regulations.
Contaminated packaging	: Empty containers should be taken to an approved waste handling site for recycling or disposal. If not otherwise specified: Dispose of as unused product.

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## Section 14: Transport information

### **International Regulations**

#### **UNRTDG**

UN number	: UN 3464
UN proper shipping name	: ORGANOPHOSPHORUS COMPOUND, SOLID, TOXIC, N.O.S. (Benzyltriphenylphosphonium chloride)
Transport hazard class(es)	: 6.1
Packing group	: III
Labels	: 6.1
Environmental hazards	: no

#### **IATA-DGR**

UN/ID No.	: UN 3464
UN proper shipping name	: Organophosphorus compound, solid, toxic, n.o.s. (Benzyltriphenylphosphonium chloride)
Transport hazard class(es)	: 6.1
Packing group	: III
Labels	: Toxic
Packing instruction (cargo aircraft)	: 677
Packing instruction (passenger aircraft)	: 670

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### IMDG-Code

UN number	: UN 3464
Proper shipping name	: ORGANOPHOSPHORUS COMPOUND, SOLID, TOXIC, N.O.S. (Benzyltriphenylphosphonium chloride)
Transport hazard class(es)	: 6.1
Packing group	: III
Labels	: 6.1
EmS Code	: F-A, S-A
Marine pollutant	: yes

### Transport in bulk according to IMO instruments

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.

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## Section 15: Regulatory information

### Safety, health and environmental regulations specific for the product in question

Workplace Safety and Health Act and Workplace Safety and Health (General Provisions) Regulations: This product is subjected to the SDS, labelling, PEL and other requirements in the Act/Regulations.

Environmental Protection and Management Act and Environmental Protection and Management (Hazardous Substances) Regulations	: Not applicable
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Fire Safety (Petroleum and Flammable Materials) Regulations	: Not applicable
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## Section 16: Other information

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Other information	: Chemours™ and the Chemours Logo are trademarks of The Chemours Company. Before use read Chemours safety information. For further information contact the local Chemours office or nominated distributors.
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### Further information

Sources of key data used to compile the Safety Data Sheet	: Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <a href="http://echa.europa.eu/">http://echa.europa.eu/</a>
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Date format	: dd.mm.yyyy
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### Full text of other abbreviations

SG OEL : Singapore. Workplace Safety and Health (General Provisions) Regulations - First Schedule Permissible Exposure Limits of Toxic Substances.

SG OEL / PEL (long term) : Permissible Exposure Level (PEL) Long Term

AIIC - Australian Inventory of Industrial Chemicals; 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; 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; TECI - Thailand Existing Chemicals 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; 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 is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

SG / EN