



**UNITED GOLD FULLY SYNTHETIC SAE 5W50 API SN**

**SECTION 1: IDENTIFICATION**




- 1.1 GHS Product identifier:** UNITED GOLD FULLY SYNTHETIC SAE 5W50 API SN
- 1.2 Recommended use of the chemical and restrictions on use:**  
Relevant uses: Lubricant  
Uses advised against: All uses not specified in this section or in section 7.3
- 1.3 Manufacturer's or supplier's details:**  
UNITED OIL COMPANY PTE LTD  
14 Tuas Drive 2, Singapore 638647  
638647 Singapore - Singapore - Singapore  
Phone.: +65 6861 1157 - Fax: +65 6861 3101  
enquiry@united-oil.com  
http://www.united-oil.com/default.aspx?uc=14
- 1.4 Emergency phone number:** +65 68611157

**SECTION 2: HAZARDS IDENTIFICATION**

- 2.1 Classification of the substance or mixture:**  
**SS 586:Part 2:2014:**  
The product is not classified as dangerous according to SS 586 : Part 2 : 2014
- 2.2 GHS label elements, including precautionary statements:**  
**SS 586:Part 2:2014:**  
None
- 2.3 Other hazards which do not result in classification:**  
Non-applicable

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

- 3.1 Substances:**  
Non-applicable
- 3.2 Mixtures:**  
**Chemical description:** Mixture based on hydrocarbons and additives  
**Components:**  
In accordance with SS 586:Part 3:2008 (2014) , the product contains:

Identification	Chemical name/Classification	Concentration
CAS: 64742-54-7	<b>Distillates (petroleum), hydrotreated heavy paraffinic , &lt; 3 % IP 346, &lt; 20.5 cSt @ 40°C</b> Asp. Tox. 1: H304 - Danger	 50 - <75 %
CAS: 64742-55-8	<b>Distillates (petroleum), hydrotreated light paraffinic, &lt; 3% DMSO (&gt; 20.5 cSt 40°C)</b>	10 - <25 %
CAS: 64742-54-7	<b>Distillates (petroleum), hydrotreated heavy paraffinic , &lt; 3 % IP 346, &gt; 20,5 cSt @ 40°C</b>	10 - <25 %
CAS: 113706-15-3	<b>Phosphorodithioic acid, mixed O,O-bis(sec-Bu and isoocetyl) esters, zinc salts</b> Aquatic Chronic 2: H411; Eye Dam. 1: H318; Skin Irrit. 2: H315 - Danger	 1 - <2.5 %
CAS: Non-applicable	<b>Long chain alkyl phenol</b> Skin Sens. 1: H317; STOT RE 2: H373 - Warning	 <1 %

To obtain more information on the hazards of the substances consult sections 11, 12 and 16.

**SECTION 4: FIRST-AID MEASURES**

- 4.1 Description of necessary first-aid measures:**  
The symptoms resulting from intoxication can appear after exposure, therefore, in case of doubt, seek medical attention for direct exposure to the chemical product or persistent discomfort, showing the SDS of this product.  
**By inhalation:**

- CONTINUED ON NEXT PAGE -



## UNITED GOLD FULLY SYNTHETIC SAE 5W50 API SN

### SECTION 4: FIRST-AID MEASURES (continued)

This product is not classified as hazardous through inhalation, however, it is recommended in case of intoxication symptoms to remove the person affected from the area of exposure, provide clean air and keep at rest. Request medical attention if symptoms persist.

**By skin contact:**

This product is not classified as hazardous when in contact with the skin. However, in case of skin contact it is recommended to remove contaminated clothes and shoes, rinse the skin or shower the person affected if necessary thoroughly with cold water and neutral soap. In case of serious reaction consult a doctor.

**By eye contact:**

Rinse eyes thoroughly with water for at least 15 minutes. If the injured person uses contact lenses, these should be removed unless they are stuck to the eyes, as this could cause further damage. In all cases, after cleaning, a doctor should be consulted as quickly as possible with the SDS of the product.

**By ingestion/aspiration:**

Do not induce vomiting, but if it does happen keep the head down to avoid aspiration. Keep the person affected at rest. Rinse out the mouth and throat, as they may have been affected during ingestion.

**4.2 Most important symptoms/effects, acute and delayed:**

Acute and delayed effects are indicated in sections 2 and 11.

**4.3 Indication of immediate medical attention and special treatment needed, if necessary:**

Non-applicable

### SECTION 5: FIRE-FIGHTING MEASURES

**5.1 Suitable extinguishing media:**

Product is non-flammable under normal conditions of storage, manipulation and use. In the case of inflammation as a result of improper manipulation, storage or use preferably use polyvalent powder extinguishers (ABC powder), in accordance with the Regulation on fire protection systems. IT IS NOT RECOMMENDED to use full jet water as an extinguishing agent.

**5.2 Specific hazards arising from the chemical:**

As a result of combustion or thermal decomposition reactive sub-products are created that can become highly toxic and, consequently, can present a serious health risk.

**5.3 Special protective actions for fire-fighters:**

Depending on the magnitude of the fire it may be necessary to use full protective clothing and individual respiratory equipment. Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit,...)

**Additional provisions:**

Act in accordance with the Internal Emergency Plan and the Information Sheets on actions to take after an accident or other emergencies. Destroy any source of ignition. In case of fire, refrigerate the storage containers and tanks for products susceptible to inflammation, explosion or BLEVE as a result of high temperatures. Avoid spillage of the products used to extinguish the fire into an aqueous medium.

### SECTION 6: ACCIDENTAL RELEASE MEASURES

**6.1 Personal precautions, protective equipment and emergency procedures:**

Isolate leaks provided that there is no additional risk for the people performing this task. Personal protection equipment must be used against potential contact with the spilled product (See section 8). Evacuate the area and keep out those who do not have protection.

**6.2 Environmental precautions:**

Avoid spillage into the aquatic environment as it contains substances potentially dangerous for this. Contain the product absorbed in hermetically sealed containers. In the case of serious spillage into the aquatic environment notify the relevant authority.

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

It is recommended:

Absorb the spillage using sand or inert absorbent and move it to a safe place. Do not absorb in sawdust or other combustible absorbents. For any concern related to disposal consult section 13.

**6.4 Reference to other sections:**

See sections 8 and 13.

- CONTINUED ON NEXT PAGE -



**UNITED GOLD FULLY SYNTHETIC SAE 5W50 API SN**

**SECTION 7: HANDLING AND STORAGE**

**7.1 Precautions for safe handling:**

A.- Precautions for safe manipulation

Comply with the current legislation concerning the prevention of industrial risks. Keep containers hermetically sealed. Control spills and residues, destroying them with safe methods (section 6). Avoid leakages from the container. Maintain order and cleanliness where dangerous products are used.

B.- Technical recommendations for the prevention of fires and explosions

Product is non-flammable under normal conditions of storage, manipulation and use. It is recommended to transfer at slow speeds to avoid the generation of electrostatic charges that can affect flammable products. Consult section 10 for information on conditions and materials that should be avoided.

C.- Technical recommendations to prevent ergonomic and toxicological risks

Do not eat or drink during the process, washing hands afterwards with suitable cleaning products.

D.- Technical recommendations to prevent environmental risks

It is recommended to have absorbent material available at close proximity to the product (See subsection 6.3)

**7.2 Conditions for safe storage, including any incompatibilities:**

A.- Technical measures for storage

- Minimum Temp.: 5 °C
- Maximum Temp.: 30 °C
- Maximum time: 6 Months

B.- General conditions for storage

Avoid sources of heat, radiation, static electricity and contact with food. For additional information see subsection 10.5

**7.3 Specific end use(s):**

Except for the instructions already specified it is not necessary to provide any special recommendation regarding the uses of this product.

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

**8.1 Control parameters/Occupational exposure limits:**

Substances whose occupational exposure limits have to be monitored in the workplace according to Workplace Safety and Health (General Provisions) Regulations

Identification	Occupational exposure limits		
cyclohexane	PEL (Long Term)	300 ppm	1030 mg/m <sup>3</sup>
CAS: 110-82-7	PEL (Short Term)		

**8.2 Appropriate engineering control measures:**

A.- Individual protection measures, such as personal protective equipment (PPE)


As a preventative measure it is recommended to use basic Personal Protection Equipment. For more information on Personal Protection Equipment (storage, use, cleaning, maintenance, class of protection,...) consult the information leaflet provided by the manufacturer. For more information see subsection 7.1.

All information contained herein is a recommendation which needs some specification from the labour risk prevention services as it is not known whether the company has additional measures at its disposal.

B.- Respiratory protection

The use of protection equipment will be necessary if a mist forms or if the occupational exposure limits are exceeded.

C.- Specific protection for the hands

Pictogram	PPE	Remarks
 Mandatory hand protection	Protective gloves against minor risks	Replace gloves in case of any sign of damage. For prolonged periods of exposure to the product for professional users/industrials, we recommend using chemical protection gloves

"As the product is a mixture of several substances, the resistance of the glove material can not be calculated in advance with total reliability and has therefore to be checked prior to the application"

D.- Ocular and facial protection



**UNITED GOLD FULLY SYNTHETIC SAE 5W50 API SN**

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)**

Pictogram	PPE	Remarks
 Mandatory face protection	Panoramic glasses against splash/projections.	Clean daily and disinfect periodically according to the manufacturer's instructions. Use if there is a risk of splashing.

E.- Bodily protection

Pictogram	PPE	Remarks
	Work clothing	Replace before any evidence of deterioration.
	Anti-slip work shoes	Replace before any evidence of deterioration.

F.- Additional emergency measures

Emergency measure	Standards	Emergency measure	Standards
 Emergency shower	ANSI Z358-1 ISO 3864-1:2011, ISO 3864-4:2011	 Eyewash stations	DIN 12 899 ISO 3864-1:2011, ISO 3864-4:2011

**Environmental exposure controls:**

In accordance with the community legislation for the protection of the environment it is recommended to avoid environmental spillage of both the product and its container. For additional information see subsection 7.1.D

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

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

For complete information see the product datasheet.

**Appearance:**

Physical state at 20 °C: Liquid  
Appearance: Not available  
Color: Not available  
Odor: Not available  
Odour threshold: Non-applicable \*

**Volatility:**

Boiling point at atmospheric pressure: Non-applicable \*  
Vapour pressure at 20 °C: Non-applicable \*  
Vapour pressure at 50 °C: Non-applicable \*  
Evaporation rate at 20 °C: Non-applicable \*

**Product description:**

Density at 20 °C: 880.4 kg/m<sup>3</sup>  
Relative density at 20 °C: 0.88  
Dynamic viscosity at 20 °C: Non-applicable \*  
Kinematic viscosity at 20 °C: Non-applicable \*  
Kinematic viscosity at 40 °C: ~120 cSt  
Kinematic viscosity at 100 °C: ~19.23 cSt  
Concentration: Non-applicable \*

\*Not relevant due to the nature of the product, not providing information property of its hazards.

- CONTINUED ON NEXT PAGE -



**UNITED GOLD FULLY SYNTHETIC SAE 5W50 API SN**

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (continued)**

pH:	Non-applicable *
Vapour density at 20 °C:	Non-applicable *
Partition coefficient n-octanol/water 20 °C:	Non-applicable *
Solubility in water at 20 °C:	Non-applicable *
Solubility properties:	Non-applicable *
Decomposition temperature:	Non-applicable *
Melting point/freezing point:	Non-applicable *
Explosive properties:	Non-applicable *
Oxidising properties:	Non-applicable *
<b>Flammability:</b>	
Flash Point:	>200 °C
Flammability (solid, gas):	Non-applicable *
Autoignition temperature:	Non-applicable *
Lower flammability limit:	Non-applicable *
Upper flammability limit:	Non-applicable *
<b>Explosive:</b>	
Lower explosive limit:	Non-applicable *
Upper explosive limit:	Non-applicable *
<b>9.2 Other information:</b>	
Surface tension at 20 °C:	Non-applicable *
Refraction index:	Non-applicable *

\*Not relevant due to the nature of the product, not providing information property of its hazards.

**SECTION 10: STABILITY AND REACTIVITY**

**10.1 Reactivity:**

No hazardous reactions are expected because the product is stable under recommended storage conditions. See section 7.

**10.2 Chemical stability:**

Chemically stable under the conditions of storage, handling and use.

**10.3 Possibility of hazardous reactions:**

Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

**10.4 Conditions to avoid:**

Applicable for handling and storage at room temperature:

Shock and friction	Contact with air	Increase in temperature	Sunlight	Humidity
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

**10.5 Incompatible materials:**

Acids	Water	Oxidising materials	Combustible materials	Others
Avoid strong acids	Not applicable	Not applicable	Not applicable	Avoid alkalis or strong bases

**10.6 Hazardous decomposition products:**

See subsection 10.3, 10.4 and 10.5 to find out the specific decomposition products. Depending on the decomposition conditions, complex mixtures of chemical substances can be released: carbon dioxide (CO<sub>2</sub>), carbon monoxide and other organic compounds.

**SECTION 11: TOXICOLOGICAL INFORMATION**

**11.1 Information on toxicological effects:**

The experimental information related to the toxicological properties of the product itself is not available

- CONTINUED ON NEXT PAGE -



**UNITED GOLD FULLY SYNTHETIC SAE 5W50 API SN**

**SECTION 11: TOXICOLOGICAL INFORMATION (continued)**

**Dangerous health implications:**

In case of exposure that is repetitive, prolonged or at concentrations higher than recommended by the occupational exposure limits, it may result in adverse effects on health depending on the means of exposure:

A- Ingestion (acute effect):

- Acute toxicity : Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for consumption. For more information see section 3.
- Corrosivity/Irritability: Based on available data, the classification criteria are not met, however it does contain substances classified as dangerous for this effect. For more information see section 3.

B- Inhalation (acute effect):

- Acute toxicity : Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for inhalation. For more information see section 3.
- Corrosivity/Irritability: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

C- Contact with the skin and the eyes (acute effect):

- Contact with the skin: Based on available data, the classification criteria are not met, however, it contains substances classified as dangerous for skin contact. For more information see section 3.
- Contact with the eyes: Based on available data, the classification criteria are not met, however it does contain substances classified as dangerous for this effect. For more information see section 3.

D- CMR effects (carcinogenicity, mutagenicity and toxicity to reproduction):

- Carcinogenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for the effects mentioned. For more information see section 3.  
IARC: Non-applicable
- Mutagenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.
- Reproductive toxicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

E- Sensitizing effects:

- Respiratory: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous with sensitising effects. For more information see section 3.
- Cutaneous: Based on available data, the classification criteria are not met, however, it contains substances classified as dangerous with sensitising effects. For more information see section 3.

F- Specific target organ toxicity (STOT) - single exposure:

Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

G- Specific target organ toxicity (STOT)-repeated exposure:

- Specific target organ toxicity (STOT)-repeated exposure: Based on available data, the classification criteria are not met, however, it does contain substances which are classified as dangerous due to repetitive exposure. For more information see section 3.
- Skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

H- Aspiration hazard:

Based on available data, the classification criteria are not met, however it does contain substances classified as dangerous for this effect. For more information see section 3.

**Other information:**

Non-applicable

**Specific toxicology information on the substances:**

Identification	Acute toxicity		Genus
Distillates (petroleum), hydrotreated light paraffinic, < 3% DMSO (> 20.5 cSt 40°C) CAS: 64742-55-8	LD50 oral	5100 mg/kg	Rat
	LD50 dermal	5100 mg/kg	Rabbit
	LC50 inhalation	>20 mg/L (4 h)	
Distillates (petroleum), hydrotreated heavy paraffinic, < 3 % IP 346, < 20.5 cSt @ 40°C CAS: 64742-54-7	LD50 oral	>5000 mg/kg	
	LD50 dermal	>5000 mg/kg	
	LC50 inhalation	>20 mg/L (4 h)	

- CONTINUED ON NEXT PAGE -



**UNITED GOLD FULLY SYNTHETIC SAE 5W50 API SN**

**SECTION 11: TOXICOLOGICAL INFORMATION (continued)**

Identification	Acute toxicity		Genus
Phosphorodithioic acid, mixed O,O-bis(sec-Bu and isoocetyl) esters, zinc salts CAS: 113706-15-3	LD50 oral	>5000 mg/kg	
	LD50 dermal	>5000 mg/kg	
	LC50 inhalation	Non-applicable	
Distillates (petroleum), hydrotreated heavy paraffinic, < 3 % IP 346, > 20,5 cSt @ 40°C CAS: 64742-54-7	LD50 oral	>5000 mg/kg	
	LD50 dermal	>5000 mg/kg	
	LC50 inhalation	>20 mg/L (4 h)	
Long chain alkyl phenol CAS: Non-applicable	LD50 oral	>5000 mg/kg	
	LD50 dermal	>5000 mg/kg	
	LC50 inhalation	Non-applicable	

**Acute Toxicity Estimate (ATE mix):**

ATE mix		Ingredient(s) of unknown toxicity
Oral	>5000 mg/kg (Calculation method)	Non-applicable
Dermal	>5000 mg/kg (Calculation method)	Non-applicable
Inhalation	>20 mg/L (4 h) (Calculation method)	Non-applicable

**SECTION 12: ECOLOGICAL INFORMATION**

The experimental information related to the eco-toxicological properties of the product itself is not available

**12.1 Toxicity:**

Identification	Acute toxicity		Species	Genus
Distillates (petroleum), hydrotreated light paraffinic, < 3% DMSO (> 20.5 cSt 40°C) CAS: 64742-55-8	LC50	5000 mg/L (96 h)	Oncorhynchus mykiss	Fish
	EC50	1000 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	1000 mg/L (96 h)	Scenedesmus subspicatus	Algae
Phosphorodithioic acid, mixed O,O-bis(sec-Bu and isoocetyl) esters, zinc salts CAS: 113706-15-3	LC50	1 - 10 mg/L (96 h)		Fish
	EC50	1 - 10 mg/L		Crustacean
	EC50	1 - 10 mg/L		Algae

**12.2 Persistence and degradability:**

Not available

**12.3 Bioaccumulative potential:**

Identification	Bioaccumulation potential	
Distillates (petroleum), hydrotreated light paraffinic, < 3% DMSO (> 20.5 cSt 40°C) CAS: 64742-55-8	BCF	
	Pow Log	3.9
	Potential	

**12.4 Mobility in soil:**

Not available

**12.5 Results of PBT and vPvB assessment:**

Non-applicable

**12.6 Other adverse effects:**

Not described

**SECTION 13: DISPOSAL CONSIDERATIONS**

**13.1 Disposal methods:**

**Waste management (disposal and evaluation):**

Consult the authorized waste service manager on the assessment and disposal operations. In case the container has been in direct contact with the product, it will be processed the same way as the actual product. Otherwise, it will be processed as non-dangerous residue. We do not recommended disposal down the drain. See epigraph 6.2.

**Regulations related to waste management:**

Legislation related to waste management:

- CONTINUED ON NEXT PAGE -



## UNITED GOLD FULLY SYNTHETIC SAE 5W50 API SN

### SECTION 13: DISPOSAL CONSIDERATIONS (continued)

Environmental Public Health (Toxic Industrial Waste) Regulations.  
Hazardous Waste (Control of Export, Import and Transit) Act.

### SECTION 14: TRANSPORT INFORMATION

#### Transport of dangerous goods by land:

With regard to SS 586-1 (2014):

- |   |                |
|---|----------------|
| <b>14.1 UN number:</b>  | Non-applicable |
| <b>14.2 UN proper shipping name:</b>  | Non-applicable |
| <b>14.3 Transport hazard class(es):</b>   | Non-applicable |
| Labels:   | Non-applicable |
| <b>14.4 Packing group, if applicable:</b>   | Non-applicable |
| <b>14.5 Environmental hazard:</b>   | No             |
| <b>14.6 Special precautions for user</b>  |                |
| Physico-Chemical properties:  | see section 9  |
| <b>14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:</b> | Non-applicable |

#### Transport of dangerous goods by sea:

With regard to IMDG 39-18:

- |   |                |
|---|----------------|
| <b>14.1 UN number:</b>  | Non-applicable |
| <b>14.2 UN proper shipping name:</b>  | Non-applicable |
| <b>14.3 Transport hazard class(es):</b>   | Non-applicable |
| Labels:   | Non-applicable |
| <b>14.4 Packing group, if applicable:</b>   | Non-applicable |
| <b>14.5 Marine pollutant:</b>   | No             |
| <b>14.6 Special precautions for user</b>  |                |
| Physico-Chemical properties:  | see section 9  |
| <b>14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:</b> | Non-applicable |

#### Transport of dangerous goods by air:

With regard to IATA/ICAO 2020:

- |   |                |
|---|----------------|
| <b>14.1 UN number:</b>  | Non-applicable |
| <b>14.2 UN proper shipping name:</b>  | Non-applicable |
| <b>14.3 Transport hazard class(es):</b>   | Non-applicable |
| Labels:   | Non-applicable |
| <b>14.4 Packing group, if applicable:</b>   | Non-applicable |
| <b>14.5 Environmental hazard:</b>   | No             |
| <b>14.6 Special precautions for user</b>  |                |
| Physico-Chemical properties:  | see section 9  |
| <b>14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:</b> | Non-applicable |

### SECTION 15: REGULATORY INFORMATION

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

##### Specific provisions in terms of protecting people or the environment:

It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of the local circumstances in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product.

##### Other legislation:

- CONTINUED ON NEXT PAGE -





## UNITED GOLD FULLY SYNTHETIC SAE 5W50 API SN

### SECTION 15: REGULATORY INFORMATION (continued)

Environmental Protection and Management (Hazardous Substances) Regulations.  
Environmental Protection and Management Act.  
Environmental Public Health Act.  
Fire Safety Act.  
Workplace Safety and Health Act.  
Workplace Safety and Health (General Provisions) Regulations.

### SECTION 16: OTHER INFORMATION

#### Legislation related to safety data sheets:

This safety data sheet has been designed in accordance with SS 586:Part 3:2008 (2014) - Specification for hazard communication for hazardous chemicals and dangerous goods - Part 3 : Preparation of safety data sheets (SDS).

#### Texts of the legislative phrases mentioned in section 3:

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3

#### SS 586:Part 2:2014:

Aquatic Chronic 2: H411 - Toxic to aquatic life with long lasting effects  
Asp. Tox. 1: H304 - May be fatal if swallowed and enters airways  
Eye Dam. 1: H318 - Causes serious eye damage  
Skin Irrit. 2: H315 - Causes skin irritation  
Skin Sens. 1: H317 - May cause an allergic skin reaction  
STOT RE 2: H373 - May cause damage to organs through prolonged or repeated exposure

#### Advice related to training:

Minimal training is recommended to prevent industrial risks for staff using this product, in order to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

#### Principal bibliographical sources:

<http://www.nea.gov.sg>

#### Abbreviations and acronyms:

IMDG: International maritime dangerous goods code  
IATA: International Air Transport Association  
ICAO: International Civil Aviation Organisation  
COD: Chemical Oxygen Demand  
BOD5: 5-day biochemical oxygen demand  
BCF: Bioconcentration factor  
LD50: Lethal Dose 50  
CL50: Lethal Concentration 50  
EC50: Effective concentration 50  
Log-POW: Octanol-water partition coefficient  
Koc: Partition coefficient of organic carbon

The information contained in this safety data sheet is based on sources, technical knowledge and current legislation, without being able to guarantee its accuracy. This information cannot be considered a guarantee of the properties of the product, it is simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within our awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.

END OF SAFETY DATA SHEET