



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 as amended by Regulation (EU) No. 2020/878, and  
Regulation (EC) No. 1272/2008

Supercedes date 28-Feb-2022

Revision date 11-Dec-2025

Revision Number 2.01

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

**Product Code(s)** 770400-24/96, 770410-24/96, 770500-24/96, 770510-24/96 Universal Hybridization & Wash Kit.  
500075, 500082, 500083, 500084, 500085, 500086 SureSeq NGS Hybridization & Wash Kit.  
Complete Workflow Solutions (Universal)-78000\*-24/96, 78010\*-24/96, 780126-48, 780127-24/96, 79000\*-24/96, 79010\*-24/96, 890001-24/96

**Product Name** Hybridisation Buffer

**Synonyms** None

**Pure substance/mixture** Mixture

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

**Recommended use** Analytical reagent  
For research use only

**Uses advised against** None known

### 1.3. Details of the supplier of the safety data sheet

<b>Manufacturer</b>	<b>Supplier</b>
Oxford Gene Technology	Sysmex Europe SE
Unit 5	Deelboge 19D
Oxford Technology Park,	22297 Hamburg
4A Technology Drive	Germany
Kidlington,	T: +49 (40) 527 26 0
Oxfordshire	
OX5 1GN, UK	
+44 (0)1865 856800	

### For further information, please contact

E-mail address support@ogt.com

### 1.4. Emergency telephone number

**Emergency telephone** +44 (0)1865 856800 (08.30-17.30 GMT)

**Emergency telephone - §45 - (EC)1272/2008**

Europe	112
--------	-----

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### *Classification according to Regulation (EC) No. 1272/2008 [CLP]*

Acute toxicity - Oral	Category 3 - (H301)
-----------------------	---------------------

Acute toxicity - Dermal	Category 4 - (H312) - (H315)
Specific target organ toxicity (single exposure)	Category 1 - (H370)
Hazardous to the aquatic environment - chronic	Category 2 - (H411)

## 2.2. Label elements

Contains Tetramethylammonium chloride



**Signal word**  
Danger

### Hazard statements

H301 - Toxic if swallowed.  
 H312 - Harmful in contact with skin.  
 H315 - Causes skin irritation.  
 H370 - Causes damage to organs.  
 H411 - Toxic to aquatic life with long lasting effects.

### Precautionary Statements - EU (§28, 1272/2008)

P260 - Do not breathe dust, fume, gas, mist, vapors and spray.  
 P273 - Avoid release to the environment.  
 P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor.  
 P308 + P311 - IF exposed or concerned: Call a POISON CENTER or doctor.  
 P321 - Specific treatment (see .? on this label).  
 P391 - Collect spillage.

29 % of the mixture consists of ingredient(s) of unknown acute toxicity.

**Unknown aquatic toxicity** Contains 0 % of components with unknown hazards to the aquatic environment.

### Additional information

This product requires tactile warnings if supplied to the general public. This product requires child resistant fastenings if supplied to the general public.

## 2.3. Other hazards

**Other hazards** No information available.

**PBT or vPvB properties** None known.

**Endocrine Disruptor Information** This product does not contain any known or suspected endocrine disruptors.

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Chemical name	Weight-%	REACH registration number	EC No. (Index No.)	Classification according to Regulation (EC) No.	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)	Notes

				1272/2008 [CLP]				
Tetramethylammonium chloride 75-57-0	10-30	No data available	200-880-8	Acute Tox. 2 (H300) Acute Tox. 3 (H311) Skin Irrit. 2 (H315) STOT SE 1 (H370) Aquatic Chronic 2 (H411)	-	-	-	-

#### Full text of H- and EUH-phrases: see section 16

#### **Acute Toxicity Estimate**

If LD50/LC50 data is not available or does not correspond to the classification category, then the appropriate conversion value from CLP Annex I, Table 3.1.2, is used to calculate the acute toxicity estimate (ATEmix) for classifying a mixture based on its components

Chemical name	Oral LD50 mg/kg	Dermal LD50 mg/kg	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapour - mg/L	Inhalation LC50 - 4 hour - gas - ppm
Tetramethylammonium chloride 75-57-0	50	500	No data available	No data available	No data available

This product does not contain candidate substances of very high concern at a concentration >=0.1% (Regulation (EC) No. 1907/2006 (REACH), Article 59).

## **SECTION 4: First aid measures**

#### 4.1. Description of first aid measures

<b>General advice</b>	Show this safety data sheet to the doctor in attendance.
<b>Inhalation</b>	Remove to fresh air. IF exposed or concerned: Get medical advice/attention. Get medical attention immediately if symptoms occur.
<b>Eye contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a doctor.
<b>Skin contact</b>	If symptoms persist, call a doctor. Wash off immediately with soap and plenty of water for at least 15 minutes.
<b>Ingestion</b>	Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Get medical attention.
<b>Self-protection of the first aider</b>	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Wear personal protective clothing (see section 8). Avoid contact with skin, eyes or clothing.

#### 4.2. Most important symptoms and effects, both acute and delayed

<b>Symptoms</b>	None known.
<b>Effects of Exposure</b>	None known.

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

<b>Note to doctors</b>	Treat symptomatically.
------------------------	------------------------

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

**Suitable Extinguishing Media** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable extinguishing media** None known.

### 5.2. Special hazards arising from the substance or mixture

**Specific hazards arising from the chemical** No information available.

**Hazardous combustion products** Carbon oxides. Nitrogen oxides (NOx). Hydrogen chloride gas.

### 5.3. Advice for firefighters

**Special protective equipment and precautions for fire-fighters** Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protective equipment.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

**Personal precautions** Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas.

**Other information** Refer to protective measures listed in Sections 7 and 8.

**For emergency responders** Use personal protection recommended in Section 8.

### 6.2. Environmental precautions

**Environmental precautions** Do not allow to enter into surface water or drains. Prevent further leakage or spillage if safe to do so.

### 6.3. Methods and material for containment and cleaning up

**Methods for containment** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** Take up mechanically, placing in appropriate containers for disposal.

**Prevention of secondary hazards** Clean contaminated objects and areas thoroughly observing environmental regulations.

### 6.4. Reference to other sections

**Reference to other sections** See section 8 for more information. See section 13 for more information.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

**Advice on safe handling** Wear personal protective equipment. Wash hands thoroughly after handling. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash it before reuse.

**General hygiene considerations** Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do

not eat, drink or smoke when using this product.

## 7.2. Conditions for safe storage, including any incompatibilities

**Storage Conditions** Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up.

**Storage class (TRGS 510)** LGK 6.1D.

## 7.3. Specific end use(s)

**Specific use(s)** The identified uses for this product are detailed in Section 1.2.

## **SECTION 8: Exposure controls/personal protection**

### 8.1. Control parameters

#### Exposure Limits

##### **Biological occupational exposure limits**

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

**Derived No Effect Level (DNEL) - Workers** No information available

Chemical name	Oral	Dermal	Inhalation
Tetramethylammonium chloride 75-57-0	-	0.4 mg/kg bw/day [4] [6]	2.9 mg/m <sup>3</sup> [4] [6]

**Derived No Effect Level (DNEL) - General Public** No information available.

Chemical name	Oral	Dermal	Inhalation
Tetramethylammonium chloride 75-57-0	0.25 mg/kg bw/day [4] [6]	-	1.76 mg/m <sup>3</sup> [4] [6]

**Predicted No Effect Concentration (PNEC)** No information available.

Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air
Tetramethylammonium chloride 75-57-0	0.6 µg/L	36 µg/L	0.06 µg/L	-	-

Chemical name	Freshwater sediment	Marine sediment	Sewage treatment	Soil	Food chain
Tetramethylammonium chloride 75-57-0	35 µg/kg sediment dw	3.5 µg/kg sediment dw	6 mg/L	6.6 µg/kg soil dw	-

## 8.2. Exposure controls

<b>Engineering controls</b>	Showers Eyewash stations Ventilation systems.
<b>Personal protective equipment</b>	
<b>Eye/face protection</b>	Handling of larger amounts: Wear protective eye glasses for protection against liquid splashes. Wear safety glasses with side shields (or goggles).
<b>Hand protection</b>	To protect the wearer, gloves must be the correct fit and be used properly. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves. Wear suitable gloves. Impervious gloves.
<b>Skin and body protection</b>	Wear suitable protective clothing. Long sleeved clothing.
<b>Respiratory protection</b>	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
<b>Environmental exposure controls</b>	No information available.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

<b>Appearance</b>	Liquid	
<b>Physical state</b>	Colourless	
<b>Colour</b>	No information available	
<b>Odour</b>	No information available	
<b>Odour threshold</b>	No information available	
<b>Property</b>	<b>Values</b>	<b>Remarks • Method</b>
<b>Melting point / freezing point</b>		No data available
<b>Boiling point or initial boiling point and boiling range</b>		No data available
<b>Flammability</b>		No data available
<b>Lower and upper explosion limit/flammability limit</b>		
<b>Lower explosion limit</b>		Not applicable
<b>Upper explosion limit</b>		Not applicable
<b>Flash point</b>		No data available
<b>Autoignition temperature</b>		
<b>Decomposition temperature</b>		No data available
<b>SADT (°C)</b>		No data available
<b>pH</b>		No data available
<b>pH (as aqueous solution)</b>		No data available
<b>Kinematic viscosity</b>		No data available
<b>Dynamic viscosity</b>		No data available
<b>Water solubility</b>		
<b>Solubility</b>		No data available
<b>Partition coefficient n-octanol/water (log value)</b>		No data available
<b>Vapour pressure</b>		No data available
<b>Density and/or relative density</b>		No data available
<b>Bulk density</b>		No data available
<b>Liquid Density</b>		No data available
<b>Relative vapour density</b>		No data available
<b>Particle characteristics</b>		No data available

**Particle Size** No data available  
**Particle Size Distribution** No data available

#### **9.2. Other information**

**Molecular weight** No information available  
**VOC content** No information available  
**Softening point** No information available

##### **9.2.1. Information with regards to physical hazard classes**

**Explosives**  
Explosive properties Not an explosive  
**Oxidising properties** Not an oxidiser

##### **9.2.2. Other safety characteristics**

No information available

## **SECTION 10: Stability and reactivity**

#### **10.1. Reactivity**

**Reactivity** None under normal use conditions.

#### **10.2. Chemical stability**

**Stability** Stable under normal conditions.

#### **Explosion data**

**Sensitivity to mechanical impact** None.  
**Sensitivity to static discharge** None.

#### **10.3. Possibility of hazardous reactions**

**Possibility of hazardous reactions** None under normal processing.

#### **10.4. Conditions to avoid**

**Conditions to avoid** None known based on information supplied.

#### **10.5. Incompatible materials**

**Incompatible materials** Strong acids. Strong bases. Strong oxidising agents.

#### **10.6. Hazardous decomposition products**

**Hazardous decomposition products** Carbon oxides. Nitrogen oxides (NOx). Hydrogen chloride.

## **SECTION 11: Toxicological information**

#### **11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008**

#### **Information on likely routes of exposure**

#### **Product Information**

**Inhalation** Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract.  
**Eye contact** Specific test data for the substance or mixture is not available.  
**Skin contact** Specific test data for the substance or mixture is not available. Causes skin irritation. (based

on components).

**Ingestion** Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. Toxic if swallowed. (based on components).

#### Symptoms related to the physical, chemical and toxicological characteristics

**Symptoms** None known.

**Acute toxicity** Based on available data, the classification criteria are not met.

#### **Numerical measures of toxicity**

The following ATE values have been calculated for the mixture:

ATEmix (oral) 171.8311 mg/kg  
ATEmix (dermal) 1,724.10 mg/kg

#### **Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Tetramethylammonium chloride	= 50 mg/kg ( Rat )	200 - 500 mg/kg ( Rabbit )	-

#### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Skin corrosion/irritation** Classification based on data available for ingredients. Causes skin irritation.

**Serious eye damage/eye irritation** Based on available data, the classification criteria are not met.

**Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.

**Germ cell mutagenicity** Based on available data, the classification criteria are not met.

**Carcinogenicity** Based on available data, the classification criteria are not met.

**Reproductive toxicity** Based on available data, the classification criteria are not met.

**STOT - single exposure** Based on the classification criteria of the Globally Harmonized System as adopted in the country or region with which this safety data sheet complies, this product has been determined to cause systemic target organ toxicity from acute exposure. (STOT SE). Causes damage to organs if swallowed. Causes damage to organs in contact with skin.

**STOT - repeated exposure** Based on available data, the classification criteria are not met.

**Aspiration hazard** Based on available data, the classification criteria are not met.

#### 11.2. Information on other hazards

##### 11.2.1. Endocrine disrupting properties

**Endocrine disruption for human health** Based on available data, the classification criteria are not met.

##### 11.2.2. Other information

**Other adverse effects** No information available.

## SECTION 12: Ecological information

### 12.1. Toxicity

Contains 0 % of components with unknown hazards to the aquatic environment. Toxic to aquatic life with long lasting effects.

Chemical name	Fish	Crustacea	Algae/aquatic plants	Toxicity to microorganisms
Tetramethylammonium chloride	LC50: 431 - 495mg/L (96h, Pimephales promelas)	-	-	-

### 12.2. Persistence and degradability

No information available.

### 12.3. Bioaccumulative potential

No information available.

Chemical name	Partition coefficient	Bioconcentration factor (BCF)	Trophic magnification factor (TMF)
Tetramethylammonium chloride	-1.6	-	-

### 12.4. Mobility in soil

No information available.

### 12.5. Results of PBT and vPvB assessment

Chemical name	PBT and vPvB assessment
Tetramethylammonium chloride	Not PBT/vPvB

### 12.6. Endocrine disrupting properties

Based on available data, the classification criteria are not met.

### 12.7. Other adverse effects

No information available.

### PMT or vPvM properties

Based on available data, the classification criteria are not met.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Dispose of waste product or used containers according to local regulations.
Waste codes / waste designations according to EWC / AVV	According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

## SECTION 14: Transport information

### IATA

<b>14.1 UN number or ID number</b>	UN2810
<b>14.2 UN proper shipping name</b>	Toxic liquid, organic, n.o.s.
<b>14.3 Transport hazard class(es)</b>	6.1
<b>14.4 Packing group</b>	III
<b>14.5 Environmental hazards</b>	Yes
<b>14.6 Special precautions for user</b>	
<b>Special Provisions</b>	A3, A4, A137
<b>ERG Code</b>	6L
<b>Description</b>	UN2810, Toxic liquid, organic, n.o.s.(Tetramethylammonium chloride), 6.1, III

**IMDG**

<b>14.1 UN number or ID number</b>	UN2810
<b>14.2 UN proper shipping name</b>	TOXIC LIQUID, ORGANIC, N.O.S.
<b>14.3 Transport hazard class(es)</b>	6.1
<b>14.4 Packing group</b>	III
<b>14.5 Environmental hazards</b>	Yes
<b>14.6 Special precautions for user</b>	
<b>Special Provisions</b>	223, 274
<b>EmS-No.</b>	F-A, S-A
<b>Description</b>	UN2810, TOXIC LIQUID, ORGANIC, N.O.S. (Tetramethylammonium chloride), 6.1, III, Marine pollutant
<b>14.7 Maritime transport in bulk according to IMO instruments</b>	No information available

**RID**

<b>14.1 UN number or ID number</b>	UN2810
<b>14.2 UN proper shipping name</b>	TOXIC LIQUID, ORGANIC, N.O.S.
<b>14.3 Transport hazard class(es)</b>	6.1
<b>14.4 Packing group</b>	III
<b>Description</b>	UN2810, TOXIC LIQUID, ORGANIC, N.O.S., 6.1, III, Environmentally Hazardous
<b>14.5 Environmental hazards</b>	Yes
<b>14.6 Special precautions for user</b>	
<b>Special Provisions</b>	None
<b>Classification code</b>	T1

**ADR**

<b>14.1 UN number or ID number</b>	UN2810
<b>14.2 UN proper shipping name</b>	TOXIC LIQUID, ORGANIC, N.O.S.
<b>14.3 Transport hazard class(es)</b>	6.1
<b>14.4 Packing group</b>	III
<b>Description</b>	UN2810, TOXIC LIQUID, ORGANIC, N.O.S., 6.1, III, Environmentally Hazardous
<b>14.5 Environmental hazards</b>	Yes
<b>14.6 Special precautions for user</b>	
<b>Special Provisions</b>	274, 614
<b>Classification code</b>	T1
<b>Tunnel restriction code</b>	(E)

**ADN**

<b>14.1 UN number or ID number</b>	UN2810
<b>14.2 UN proper shipping name</b>	TOXIC LIQUID, ORGANIC, N.O.S.
<b>14.3 Transport hazard class(es)</b>	6.1
<b>14.4 Packing group</b>	III
<b>Description</b>	UN2810, TOXIC LIQUID, ORGANIC, N.O.S., 6.1, III, Environmentally Hazardous
<b>14.5 Environmental hazard</b>	Yes
<b>14.6 Special precautions for user</b>	
<b>Special Provisions</b>	274, 614, 802
<b>Classification code</b>	T1
<b>Ventilation</b>	VE02
<b>Equipment Requirements</b>	PP, EP, TOX, A

## **SECTION 15: Regulatory information**

## **15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

## **National regulations**

## France

## **Occupational Illnesses (R-463-3, France)**

## Germany

**Water hazard class (WGK)** slightly hazardous to water (WGK 1)

## Chemical Prohibition Ordinance (ChemVerbotsV)

Not applicable.

**TRGS 905** Not applicable

<b>Ordinance on the Incentive Tax on Volatile Organic Compounds (OVOC) SR 814.018</b>	Not applicable
<b>Storage of Hazardous Material</b>	Not applicable
<b>WPO (GSchV) SR 814.201; WPA (GSchG) SR 814.20</b>	Not applicable
<b>Major Accidents Ordinance SR 814.012</b>	Not applicable

## European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

**Authorisations and/or restrictions on use:**

This product does not contain substances subject to authorisation (Regulation (EC) No. 1907/2006 (REACH), Annex XIV) This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

## Persistent Organic Pollutants

Not applicable

Dangerous substance category per Seveso Directive (2012/18/EU)

H3 - STOT SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE  
E2 - Hazardous to the Aquatic Environment in Category Chronic 2

Ozone-depleting substances (ODS) regulation (EC) 2024/590

Scene depicted  
Not applicable.

EU - Plant Protection Products (1107/2009/EC)

Biocidal Products Regulation (EU) No 528/2012 (BPR)

Explosives Precursors Marketing and Use (2019/1148)

## Explosives PR

## International Inventories

[International Inventories](#)  
Contact supplier for inventory compliance status

## 15.2. Chemical safety assessment

**Chemical Safety Report** No information available.

## SECTION 16: Other information

P264 - Wash face, hands and any exposed skin thoroughly after handling  
 P270 - Do not eat, drink or smoke when using this product  
 P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor  
 P321 - Specific treatment (see supplemental first aid instructions on this label)  
 P330 - Rinse mouth  
 P405 - Store locked up  
 P501 - Dispose of contents and container in accordance with local, regional, national, and international regulations as applicable  
 P280 - Wear protective gloves, protective clothing, eye protection and face protection  
 P302 + P352 - IF ON SKIN: Wash with plenty of water and soap  
 P312 - Call a POISON CENTER or doctor if you feel unwell  
 P321 - Specific treatment (see supplemental instructions on the administration of antidotes on this label)  
 P321 - Specific treatment (see .? on this label)  
 P362 + P364 - Take off contaminated clothing and wash it before reuse  
 P332 + P313 - If skin irritation occurs: Get medical advice/attention  
 P260 - Do not breathe dust, fume, gas, mist, vapors and spray  
 P308 + P311 - IF exposed or concerned: Call a POISON CENTER or doctor  
 P273 - Avoid release to the environment  
 P391 - Collect spillage

### Key or legend to abbreviations and acronyms used in the safety data sheet

*List may include phrases which are not applicable to this product*

ACGIH	American Conference of Governmental Industrial Hygienists
AIDII	Italian Association of Industrial Hygienists
ADN	Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (Europe)
ADR	Agreement concerning the International Carriage of Dangerous Goods by Road (Europe)
AIIC	Australian Inventory of Industrial Chemicals
ATE	Acute Toxicity Estimate
ASTM	American Society for the Testing of Materials
bar	Biological Reference Values for Chemical Compounds in the Work Area
BAT	Biological tolerance values for occupational exposure
BEL	Biological exposure limits
bw	Body weight
Ceiling	Maximum limit value
CLP	Classification, Labelling and Packaging Regulation; Regulation (EC) No 1272/2008
CMR	Carcinogen, Mutagen or Reproductive Toxicant
DFG	German Research Foundation
DOT	Department of Transportation (United States)
DSL	Domestic Substances List (Canada)
ECHA	European Chemicals Agency
EC Number	European Community number
EmS	Emergency Schedule
ENCS	Existing and New Chemical Substances (Japan)
EPA	U.S. Environmental Protection Agency
EWC	European Waste Codes
GHS	Globally Harmonized 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
ICAO	International Civil Aviation Organisation
IECSC	Inventory of Existing Chemical Substances in China

IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
ISO	International Organisation for Standardisation
KECI	Korean Existing Chemicals Inventory
LC50	Lethal Concentration to 50% of a test population
LD50	Lethal Dose to 50% of a test population (Median Lethal Dose)
MAK	Maximum Concentration at the Workplace
MAL	Measuring Technical Hygienic Air Needs
MARPOL	International Convention for the Prevention of Pollution from Ships
MDLPS	Ministry of Labour and Social Policy
n.o.s.	Not Otherwise Specified
NOAEC	No Observed Adverse Effect Concentration
NOAEL	No Observed Adverse Effect Level
NOELR	No Observable Effect Loading Rate
NZIoC	New Zealand Inventory of Chemicals
OECD	Organization for Economic Cooperation and Development
OEL	Occupational exposure limits
PBT	Persistent, Bioaccumulative and Toxic substance
PICCS	Philippines Inventory of Chemicals and Chemical Substances
PMT	Persistent, Mobile and Toxic
PPE	Personal protective equipment
QSAR	Quantitative Structure Activity Relationship
REACH	Registration, Evaluation, Authorisation, and Restriction of Chemicals (REACH) Regulation (EC 1907/2006)
RID	Agreement concerning the International Carriage of Dangerous Goods by Rail (Europe)
SADT	Self-Accelerating Decomposition Temperature
SAR	Structure-activity relationship
SDS	Safety Data Sheet
SL	Surface Limit
STEL	Short Term Exposure Limit
STOT RE	Specific target organ toxicity - Repeated exposure
STOT SE	Specific target organ toxicity - Single exposure
SVHC	Substance of very high concern
TCSI	Taiwan Chemical Substance Inventory
TDG	Transport of Dangerous Goods (Canada)
TRGS	Technical Rule for Hazardous Substances
TSCA	Toxic Substances Control Act (United States)
TWA	Time-Weighted Average
UN	United Nations
VOC	Volatile organic compounds
vPvB	Very Persistent and Very Bioaccumulative
vPvM	Very Persistent and Very Mobile
As	Allergenic substance
C	Carcinogen
DS	Dermal Sensitizer
Ot	Ototoxicant
pOt	Ototoxicant - potential to cause hearing disorders
PS	Photosensitiser
RS	Respiratory Sensitiser
S	Sensitiser
poS	Sensitizer - capable of causing occupational asthma
Sa	Simple asphyxiant
Sd	Skin designation
pSd	Skin designation - potential for cutaneous absorption
Sdv	Skin designation - vacated
Sk	Skin notation

dSk	Skin notation - danger of cutaneous absorption
pSk	Skin notation - potential for cutaneous absorption

Classification procedure	
Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - vapour	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitisation	Calculation method
Skin sensitisation	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration hazard	Calculation method
Ozone	Calculation method

#### Key literature references and sources for data used to compile the SDS

U.S. Agency for Toxic Substances and Disease Registry (ATSDR)  
 U.S. Environmental Protection Agency ChemView Database  
 European Food Safety Authority (EFSA)  
 European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA\_RAC)  
 European Chemicals Agency (ECHA) (ECHA\_API)  
 U.S. Environmental Protection Agency  
 Acute Exposure Guideline Level(s) (AEGL(s))  
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act  
 U.S. Environmental Protection Agency High Production Volume Chemicals  
 Food Research Journal  
 Hazardous Substance Database  
 International Uniform Chemical Information Database (IUCLID)  
 Japan GHS Classification  
 Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)  
 NIOSH (National Institute for Occupational Safety and Health)  
 National Library of Medicine's ChemID Plus (NLM CIP)  
 National Library of Medicine's PubMed database (NLM PUBMED)  
 U.S. National Toxicology Program (NTP)  
 New Zealand's Chemical Classification and Information Database (CCID)  
 International Organization for Economic Co-operation and Development (OECD) Environment, Health, and Safety Publications  
 International Organization for Economic Co-operation and Development (OECD) High Production Volume Chemicals Program  
 International Organization for Economic Co-operation and Development (OECD) Screening Information Data Set  
 United Nations World Health Organization (WHO)

**Issuing Date** 28-Feb-2022

**Supercedes date** 28-Feb-2022

**Revision date** 11-Dec-2025

**Revision Note** SDS sections updated: 1

#### Disclaimer

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.

**End of Safety Data Sheet**