# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Version 6.2
Revision Date 19.06.2023
Print Date 13.07.2026
GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

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

### 1.1 Product identifiers

Product name : Anti-ARL5A

Product Number : SAB2108289
Brand : Sigma
REACH No. :

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

Identified uses : Laboratory chemicals, Manufacture of substances

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

Company : Merck Life Science Sp. z o.o
Pastelowa 8
PL-60-198 POZNAN

Telephone : +48 61 8290-100
Fax : +48 61 8290-120
E-mail address : TechnicalService@merckgroup.com

### 1.4 Emergency telephone

Emergency Phone # : +(48)-223988029 (CHEMTREC) 112
(numer alarmowy)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.

### 2.2 Label elements

Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.

### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information:



The life science business of Merck operates as MilliporeSigma in the US and Canada

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information:
The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

No components need to be disclosed according to the applicable regulations.

## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

**If inhaled**
If breathed in, move person into fresh air. If not breathing, give artificial respiration.

**In case of skin contact**
Wash off with soap and plenty of water.

**In case of eye contact**
Flush eyes with water as a precaution.

**If swallowed**
Never give anything by mouth to an unconscious person. Rinse mouth with water.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

No data available

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

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

Nature of decomposition products not known.

### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

### 5.4 Further information

No data available



The life science business of Merck operates as MilliporeSigma in the US and Canada

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures
Avoid breathing vapors, mist or gas.
For personal protection see section 8.

### 6.2 Environmental precautions
No special environmental precautions required.

### 6.3 Methods and materials for containment and cleaning up
Keep in suitable, closed containers for disposal.

### 6.4 Reference to other sections
For disposal see section 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling
For precautions see section 2.2.

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

**Storage conditions**
Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

**Storage stability**
Recommended storage temperature
-20 °C

**Storage class**
Storage class (TRGS 510): 12: Non Combustible Liquids

### 7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

**Ingredients with workplace control parameters**

### 8.2 Exposure controls

**Personal protective equipment**

**Eye/face protection**
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection**
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.



The life science business of Merck operates as MilliporeSigma in the US and Canada

The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

**Body Protection**
Impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**
Respiratory protection not required. For nuisance exposures use type OV/AG (US) or type ABEK (EU EN 14387) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Control of environmental exposure**
No special environmental precautions required.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

| | | |
|---|---|---|
| a) | Physical state | liquid |
| b) | Color | No data available |
| c) | Odor | No data available |
| d) | Melting point/freezing point | No data available |
| e) | Initial boiling point and boiling range | No data available |
| f) | Flammability (solid, gas) | No data available |
| g) | Upper/lower flammability or explosive limits | No data available |
| h) | Flash point | No data available |
| i) | Autoignition temperature | No data available |
| j) | Decomposition temperature | No data available |
| k) | pH | No data available |
| l) | Viscosity | Viscosity, kinematic: No data available<br>Viscosity, dynamic: No data available |
| m) | Water solubility | No data available |
| n) | Partition coefficient: n-octanol/water | No data available |
| o) | Vapor pressure | No data available |



The life science business of Merck operates as MilliporeSigma in the US and Canada

| | | |
|---|---|---|
| p) | Density | No data available |
| | Relative density | No data available |
| q) | Relative vapor density | No data available |
| r) | Particle characteristics | No data available |
| s) | Explosive properties | Not classified as explosive. |
| t) | Oxidizing properties | none |

**9.2 Other safety information**
No data available

## SECTION 10: Stability and reactivity

**10.1 Reactivity**
No data available

**10.2 Chemical stability**
Stable under recommended storage conditions.

**10.3 Possibility of hazardous reactions**
No data available

**10.4 Conditions to avoid**
No data available

**10.5 Incompatible materials**
No data available

**10.6 Hazardous decomposition products**
In the event of fire: see section 5

## SECTION 11: Toxicological information

**11.1 Information on toxicological effects**

**Mixture**

**Acute toxicity**
LD50 Oral - Rat - > 90.000 mg/kg (water)
Remarks: (RTECS)
Oral: No data available
LD50 Oral - Rat - 29.700 mg/kg (Saccharose)
Remarks: Behavioral:Somnolence (general depressed activity).
Cyanosis
Diarrhea
(RTECS)



The life science business of Merck operates as MilliporeSigma in the US and Canada

LD50 Oral - Rat - female - > 2.000 mg/kg (disodium hydrogen orthophosphate)
(OECD Test Guideline 420)
LD50 Oral - Rat - 27 mg/kg (sodium azide)
Remarks: (RTECS)
LD50 Oral - Rat - female - > 2.000 mg/kg (dihydrogen potassium phosphate)
(OECD Test Guideline 420)
Remarks: The value is given in analogy to the following substances: dipotassium hydrogen phosphate
LD50 Oral - Rat - female - 3.020 mg/kg (potassium chloride)
Remarks: (ECHA)
LC50 Inhalation - Rat - male and female - 4 h - > 0,83 mg/l - dust/mist
(disodium hydrogen orthophosphate)
(OECD Test Guideline 403)
LC50 Inhalation - Rat - male and female - 4 h - 0,054 - 0,52 mg/l - dust/mist
(sodium azide)
(US-EPA)
LC50 Inhalation - Rat - male and female - 4 h - > 0,83 mg/l - dust/mist
(dihydrogen potassium phosphate)
(OECD Test Guideline 403)
Remarks: (in analogy to similar products)
The value is given in analogy to the following substances: sodium dihydrogen phosphate
LD50 Dermal - Rabbit - > 10.000 mg/kg (sodium chloride)
Remarks: (RTECS)
LD50 Dermal - Rat - male and female - > 2.000 mg/kg (disodium hydrogen orthophosphate)
(OECD Test Guideline 402)
LD50 Dermal - Rabbit - 20 mg/kg (sodium azide)
Remarks: (RTECS)
LD50 Dermal - Rabbit - male and female - > 2.000 mg/kg (dihydrogen potassium phosphate)
(OECD Test Guideline 402)

**Skin corrosion/irritation**
Skin - Rabbit (sodium chloride)
Result: No skin irritation
Remarks: (ECHA)
Skin - Rabbit (disodium hydrogen orthophosphate)
Result: No skin irritation - 24 h
(OECD Test Guideline 404)
Skin - In vitro study (sodium azide)
Result: No skin irritation
(OECD Test Guideline 439)
Skin - Rabbit (dihydrogen potassium phosphate)
Result: No skin irritation - 4 h
(Draize Test)
Remarks: (ECHA)

**Serious eye damage/eye irritation**
Eyes - Rabbit (sodium chloride)
Result: No eye irritation
Remarks: (ECHA)
Eyes - Rabbit (disodium hydrogen orthophosphate)
Result: No eye irritation - 30 s



The life science business of Merck operates as MilliporeSigma in the US and Canada

(OECD Test Guideline 405)
Eyes - Bovine cornea (sodium azide)
Result: No eye irritation - 4 h
(OECD Test Guideline 437)
Eyes - Rabbit (dihydrogen potassium phosphate)
Result: No eye irritation - 30 s
(Draize Test)
Remarks: (ECHA)
Remarks: No data available

**Respiratory or skin sensitization**
Local lymph node assay (LLNA) - Mouse (disodium hydrogen orthophosphate)
Result: negative
(OECD Test Guideline 429)
Local lymph node assay (LLNA) - Mouse (sodium azide)
Result: negative
(OECD Test Guideline 429)
No data available

**Germ cell mutagenicity**
Animal testing did not show any mutagenic effects. (sodium chloride
Test Type: Ames test
(sodium chloride)
Test system: Escherichia coli/Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
Test Type: Mutagenicity (mammal cell test):
(Saccharose)
Result: negative
Remarks: (National Toxicology Program)
Test Type: Micronucleus test
(disodium hydrogen orthophosphate)
Test system: Human lymphocytes
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 487
Result: negative
Test Type: In vitro mammalian cell gene mutation test
(disodium hydrogen orthophosphate)
Test system: mouse lymphoma cells
Metabolic activation: with and without metabolic activation
Result: negative
Remarks: (ECHA)
Test Type: Chromosome aberration test in vitro
(disodium hydrogen orthophosphate)
Test system: Human lymphocytes
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative
Test Type: Mutagenicity (mammal cell test): chromosome aberration.
(sodium azide)
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation



The life science business of Merck operates as MilliporeSigma in the US and Canada

Method: OECD Test Guideline 473
Result: negative
Test Type: unscheduled DNA synthesis assay
(sodium azide)
Test system: Chinese hamster lung cells
Metabolic activation: without metabolic activation
Method: OECD Test Guideline 482
Result: negative
Test Type: sister chromatid exchange assay
(sodium azide)
Test system: Chinese hamster ovary cells
Metabolic activation: without metabolic activation
Method: OECD Test Guideline 479
Result: negative
Test Type: Micronucleus test
(dihydrogen potassium phosphate)
Test system: Human lymphocytes
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 487
Result: negative
Test Type: In vitro mammalian cell gene mutation test
(dihydrogen potassium phosphate)
Test system: mouse lymphoma cells
Metabolic activation: with and without metabolic activation
Result: negative
Remarks: (ECHA)
Test Type: Ames test
(potassium chloride)
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
Remarks: (ECHA)
Test Type: In vitro mammalian cell gene mutation test
(potassium chloride)
Test system: mouse lymphoma cells
Metabolic activation: without metabolic activation
Method: OECD Test Guideline 476
Result: negative
Remarks: (ECHA)
Test Type: Mutagenicity (mammal cell test): chromosome aberration.
(potassium chloride)
Test system: Chinese hamster lung cells
Metabolic activation: without metabolic activation
Method: OECD Test Guideline 473
Result: positive
Remarks: (ECHA)

**Carcinogenicity**
Did not show carcinogenic effects in animal experiments. (sodium chloride)

**Reproductive toxicity**
Did not show teratogenic effects in animal experiments. (sodium chloride)



The life science business of Merck operates as MilliporeSigma in the US and Canada

No impairment of reproductive performance suspected. (sodium chloride)
No data available
No data available
No data available

**Specific target organ toxicity - single exposure**
No data available

**Specific target organ toxicity - repeated exposure**
Oral - May cause damage to organs through prolonged or repeated exposure.
- Brain

**Aspiration hazard**
No data available

## 11.2 Additional Information

**Endocrine disrupting properties**

**Product:**

| | |
|---|---|
| Assessment | The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. |

Repeated dose toxicity - Rat - male - Oral - 2 yr - NOAEL (No observed adverse effect level) - 1.820 mg/kg - LOAEL (Lowest observed adverse effect level) - 110 mg/kg
Remarks: (ECHA)
(potassium chloride)
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. (water)

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. (Rabbit protein)

Vomiting, Diarrhea, Dehydration and congestion may occur in internal organs. Hypertonic salt solutions can produce inflammatory reactions in the gastrointestinal tract., Nausea (sodium chloride)
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. (sodium chloride)

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. (Saccharose)

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. (disodium hydrogen orthophosphate)

Nausea, Headache, Vomiting, Laboratory experiments in animals have shown sodium azide to produce a profound hypotensive effect, demyelination of myelinated nerve fibers in the central nervous system, testicular damage, blindness, attacks of rigidity, and hepatic and cerebral effects., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. (sodium azide)



The life science business of Merck operates as MilliporeSigma in the US and Canada

irritant effects, Discomfort, Nausea, Diarrhea, Vomiting, gastric pain (dihydrogen potassium phosphate)
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. (dihydrogen potassium phosphate)

hyperkalemia, Nausea, Vomiting, Abdominal pain, Diarrhea, Constipation., Paresthesia., Thirst, Dizziness, Rash, pruritus, Weakness, muscle cramps, minor psychiatric changes, minor visual changes (potassium chloride)
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. (potassium chloride)

Substances which occur in nature
(Saccharose)
Hazardous properties cannot be excluded but are unlikely when the product is handled appropriately.
(Saccharose)
Handle in accordance with good industrial hygiene and safety practice.
(Saccharose)

However, when the product is handled appropriately, hazardous effects are unlikely to occur.
(disodium hydrogen orthophosphate)
Handle in accordance with good industrial hygiene and safety practice.
(disodium hydrogen orthophosphate)

Hazardous properties cannot be excluded but are unlikely when the product is handled appropriately.
(dihydrogen potassium phosphate)
Inhalation of the dusts should be avoided as even inert dusts may impair respiratory organ functions.
(dihydrogen potassium phosphate)
Handle in accordance with good industrial hygiene and safety practice.
(dihydrogen potassium phosphate)

## SECTION 12: Ecological information

### 12.1 Toxicity

**Mixture**

| | |
|---|---|
| Toxicity to fish | flow-through test LC50 - Lepomis macrochirus (Bluegill) - 5.840 mg/l - 96 h (sodium chloride)<br>Remarks: (ECHA) |
| Toxicity to fish | semi-static test LC50 - Oncorhynchus mykiss (rainbow trout) - > 100 mg/l - 96 h (disodium hydrogen orthophosphate)<br>(OECD Test Guideline 203) |
| Toxicity to fish | flow-through test LC50 - Oncorhynchus mykiss (rainbow trout) - 2,75 mg/l - 96 h (sodium azide)<br>(OECD Test Guideline 203) |
| Toxicity to fish | semi-static test LC50 - Oncorhynchus mykiss (rainbow trout) - > 100 mg/l - 96 h (dihydrogen potassium phosphate) |



The life science business of Merck operates as MilliporeSigma in the US and Canada

| | |
|---|---|
| | (OECD Test Guideline 203) |
| Toxicity to fish | static test LC50 - Pimephales promelas (fathead minnow) - 880 mg/l - 96 h (potassium chloride)<br>(OECD Test Guideline 203) |
| Toxicity to daphnia and other aquatic invertebrates | static test EC50 - Daphnia magna (Water flea) - 874 mg/l - 48 h (sodium chloride)<br>Remarks: (ECHA) |
| | static test LC50 - Daphnia magna (Water flea) - 4.136 mg/l - 48 h (sodium chloride)<br>(OECD Test Guideline 202) |
| Toxicity to daphnia and other aquatic invertebrates | static test EC50 - Daphnia magna (Water flea) - > 100 mg/l - 48 h (disodium hydrogen orthophosphate)<br>(OECD Test Guideline 202) |
| Toxicity to daphnia and other aquatic invertebrates | static test EC50 - Daphnia magna (Water flea) - > 100 mg/l - 48 h (dihydrogen potassium phosphate)<br>(OECD Test Guideline 202) |
| Toxicity to daphnia and other aquatic invertebrates | static test EC50 - Daphnia magna (Water flea) - 440 - 880 mg/l - 48 h (potassium chloride)<br>(OECD Test Guideline 202) |
| Toxicity to algae | static test EC50 - Nitzschia sp. - 2.430 mg/l - 120 h (sodium chloride)<br>(OECD Test Guideline 201) |
| Toxicity to algae | static test ErC50 - Desmodesmus subspicatus (green algae) - > 100 mg/l - 72 h (disodium hydrogen orthophosphate)<br>(OECD Test Guideline 201) |
| Toxicity to algae | static test ErC50 - Pseudokirchneriella subcapitata - 0,35 mg/l - 96 h (sodium azide)<br>(OECD Test Guideline 201) |
| Toxicity to algae | static test ErC50 - Desmodesmus subspicatus (green algae) - > 100 mg/l - 72 h (dihydrogen potassium phosphate)<br>(OECD Test Guideline 201) |
| Toxicity to algae | static test ErC50 - Desmodesmus subspicatus (green algae) - > 100 mg/l - 72 h (potassium chloride)<br>(OECD Test Guideline 201) |
| Toxicity to bacteria | static test EC50 - activated sludge - > 1.000 mg/l - 3 h (disodium hydrogen orthophosphate)<br>(OECD Test Guideline 209) |
| Toxicity to bacteria | |
| Toxicity to bacteria | static test EC50 - activated sludge - > 1.000 mg/l - 3 h (dihydrogen potassium phosphate)<br>(OECD Test Guideline 209) |
| | static test NOEC - activated sludge - > 1.000 mg/l - 3 h (dihydrogen potassium phosphate) |



The life science business of Merck operates as MilliporeSigma in the US and Canada

| | |
|---|---|
| | (OECD Test Guideline 209) |
| Toxicity to bacteria | static test EC50 - activated sludge - > 1.000 mg/l - 3 h (potassium chloride)<br>(OECD Test Guideline 209) |
| Toxicity to fish(Chronic toxicity) | flow-through test NOEC - Pimephales promelas (fathead minnow) - 252 mg/l - 33 d (sodium chloride)<br>(OECD Test Guideline 210) |
| Toxicity to daphnia and other aquatic invertebrates(Chronic toxicity) | semi-static test NOEC - Daphnia pulex (Water flea) - 314 mg/l - 21 d (sodium chloride)<br>(OECD Test Guideline 211) |

**12.2 Persistence and degradability**

The methods for determining the biological degradability are not applicable to inorganic substances.
The methods for determining biodegradability are not applicable to inorganic substances.
The methods for determining the biological degradability are not applicable to inorganic substances.
The methods for determining the biological degradability are not applicable to inorganic substances.
The methods for determining biodegradability are not applicable to inorganic substances.

**12.3 Bioaccumulative potential**

Does not bioaccumulate.

**12.4 Mobility in soil**

No data available

**12.5 Results of PBT and vPvB assessment**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**12.6 Endocrine disrupting properties**

**Product:**

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

**12.7 Other adverse effects**

No ecological problems are to be expected when the product is handled and used with due care and attention.
Discharge into the environment must be avoided.
Discharge into the environment must be avoided.
No data available

**Components**



The life science business of Merck operates as MilliporeSigma in the US and Canada

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

**Product**
Offer surplus and non-recyclable solutions to a licensed disposal company.

**Contaminated packaging**
Dispose of as unused product.

## SECTION 14: Transport information

### 14.1 UN number
ADR/RID: - IMDG: - IATA: -

### 14.2 UN proper shipping name
ADR/RID: Not dangerous goods
IMDG: Not dangerous goods
IATA: Not dangerous goods

### 14.3 Transport hazard class(es)
ADR/RID: - IMDG: - IATA: -

### 14.4 Packaging group
ADR/RID: - IMDG: - IATA: -

### 14.5 Environmental hazards
ADR/RID: no IMDG Marine pollutant: no IATA: no

### 14.6 Special precautions for user
No data available
**Further information**
Not classified as dangerous in the meaning of transport regulations.

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

### 15.2 Chemical Safety Assessment
For this product a chemical safety assessment was not carried out



The life science business of Merck operates as MilliporeSigma in the US and Canada

## SECTION 16: Other information

### Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; 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; 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; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; 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

### Further information

Copyright 2020 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only.
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding. However, all of the



The life science business of Merck operates as MilliporeSigma in the US and Canada

information in the document regarding the product remains unchanged and matches the product ordered. For further information please contact mlsbranding@sial.com.



The life science business of Merck operates as MilliporeSigma in the US and Canada