

Safety Data Sheet



Trade name : TONALID®
Revision date : 13.08.2018
Print date : 12/31/2018

Version (Revision) : 5.2.0 (5.1.0)

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

1.1 Product identifier

TONALID® (W01052)

7-ACETYL-1,1,3,4,4,6-HEXAMETHYLTETRALINE ; CAS No. : 1506-02-1 ; EC No. : 216-133-4 ; REACH registration No. : 01-2119539433-40

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

Relevant identified uses

Fragrance ingredient which may be used in fragrance compounds according to the current legislation and IFRA rules.
Reserved for industrial and professional use. Short title of the exposure scenario

Uses advised against

Not intended for oral consumption.

1.3 Details of the supplier of the safety data sheet

Supplier (manufacturer/importer/only representative/downstream user/distributor)

Keva Fragrance Industries Pte.Ltd.

Street : 540 Sims Ave, #03-05 Sims Ave Centre

Postal code : Singapore-387603

Telephone : +91 22 2167 7942

Telefax : +91 22 2164 9766

Information contact : regulatory.affairs@keva.co.in

1.4 Emergency telephone number

+31 342 407 793

Austria: +43 13 13 04 56 20 // Belgium: +32 02 26 49 63 6 // Bulgaria: +35 92 91 54 40 9 // Croatia: +38 50 14 64 13 68 // Cyprus: +35 72 24 05 61 1 // Czech Republic: +42 02 24 91 92 93 // Denmark: +45 72 54 40 00 // Estonia: +37 26 26 93 79 // Finland: 09 471 977 // France: +33 14 04 43 00 0 // Germany: +49 30 18 41 23 46 0 // Greece: +30 21 06 47 94 09 // Hungary: +36 80 20 11 99 // Ireland: +35 31 80 92 56 6 // Italy: +39 06 49 90 61 40 // Latvia: +37 16 70 32 60 0 // Lithuania: +37 07 06 62 00 8 // Luxembourg: +35 22 47 85 55 1 // Netherlands: +31 88 75 58 56 1 // Norway: +47 73 58 05 00 // Poland: +48 42 25 38 40 0 // Portugal: +35 12 13 30 32 71 // Romania: +40 21 31 83 60 6 // Serbia: +38 11 17 15 52 25 // Slovakia: +42 12 54 65 23 07 // Slovenia: +38 61 40 06 05 1 // Spain: +34 91 76 89 80 0 // Sweden: +46 83 31 23 1 // United Kingdom: 111

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)

Aquatic Acute 1 ; H400 - Hazardous to the aquatic environment : Acute 1 ; Very toxic to aquatic life.

Aquatic Chronic 1 ; H410 - Hazardous to the aquatic environment : Chronic 1 ; Very toxic to aquatic life with long lasting effects.

Acute Tox. 4 ; H302 - Acute toxicity (oral) : Category 4 ; Harmful if swallowed.

2.2 Label elements

Labelling according to the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)

Hazard pictograms

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Environment (GHS09) · Exclamation mark (GHS07)

Signal word

Warning

Hazard statements

H302 Harmful if swallowed.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

P264 Wash hands thoroughly after handling.
P273 Avoid release to the environment.
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor/.../ if you feel unwell.
P391 Collect spillage.
P501 Dispose of contents/container to a chemical waste treatment facility or recycling plant.

2.3 Other hazards

None

SECTION 3: Composition/information on ingredients

3.1 Substances

Substance name : 7-ACETYL-1,1,3,4,4,6-HEXAMETHYLTETRALINE

EC No. : 216-133-4

REACH No. : 01-2119539433-40

CAS No. : 1506-02-1

Purity : ≥ 95 % [mass]

Synonyms

IUPAC : 1-(3,5,5,6,8,8-HEXAMETHYL-5,6,7,8- TETRAHYDRONAPHTHALEN-2-YL)ETHANONE

INCI : ACETYL HEXAMETHYL TETRALINE

Hazardous impurities

5-ACETYL-1,1,2,3,3,6-HEXAMETHYLINDAN ; REACH registration No. : 01-2120769674-39-0000 ; EC No. : 239-360-0; CAS No. : 15323-35-0

Classification 1272/2008 [CLP] : Acute Tox. 4 ; H302 Skin Irrit. 3 ; H316 Aquatic Acute 1 ; H400 Aquatic Chronic 1 ; H410

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

Medical treatment necessary. Remove victim out of the danger area. Put victim at rest, cover with a blanket and keep warm. Do not leave affected person unattended. If unconscious place in recovery position and seek medical advice.

Following inhalation

Remove casualty to fresh air and keep warm and at rest. If breathing is irregular or stopped, administer artificial respiration.



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In case of skin contact

Wash immediately with: Water Do not wash with: Solvents/Thinner

After eye contact

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

After ingestion

Rinse mouth thoroughly with water. Call a physician in any case! Let water be drunken in little sips (dilution effect). Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

No information available.

4.3 Indication of any immediate medical attention and special treatment needed

None

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

alcohol resistant foam Extinguishing powder Water mist

Unsuitable extinguishing media

Strong water jet

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

In case of fire may be liberated: Carbon dioxide (CO₂) Carbon monoxide (CO).

5.3 Advice for firefighters

Do not inhale explosion and combustion gases. Use water spray jet to protect personnel and to cool endangered containers. Do not allow run-off from fire-fighting to enter drains or water courses. Very toxic to aquatic life. May cause long lasting harmful effects to aquatic life.

Special protective equipment for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Do not breathe dust. Provide adequate ventilation. Remove persons to safety. See protective measures under point 7 and 8.

6.2 Environmental precautions

Ensure all waste water is collected and treated via a waste water treatment plant. In case of entry into waterways, soil or drains, inform the responsible authorities. Very toxic to aquatic life. May cause long lasting harmful effects to aquatic life. Clear up spills immediately and dispose of waste safely.

6.3 Methods and material for containment and cleaning up

Wet clean or vacuum up solids. Avoid dust formation. Collect in closed and suitable containers for disposal.

6.4 Reference to other sections

See protective measures under point 7 and 8.

SECTION 7: Handling and storage



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7.1 Precautions for safe handling

When using do not eat, drink, smoke, sniff. Wash hands before breaks and after work. Provide adequate ventilation as well as local exhaust at critical locations. All work processes must always be designed so that the following is as low as possible: eye contact, skin contact. Wear personal protection equipment (refer to section 8). Ensure operatives are trained to minimise exposures.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions

Ensure adequate ventilation of the storage area. Keep/Store only in original container. Use isolated drainage to prevent discharge to soil. Restrict access to stockrooms. Never use pressure to empty container.

Hints on joint storage

Keep away from oxidising agent . acid and alkali .

7.3 Specific end use(s)

None

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

To date, no national critical limit values exist.

DNEL/DMEL and PNEC values

DNEL/DMEL

Limit value type :	DNEL/DMEL (Consumer) (7-ACETYL-1,1,3,4,4,6-HEXAMETHYLTETRALINE ; CAS No. : 1506-02-1)
Exposure route :	Dermal
Exposure frequency :	Short term (acute), systemic
Limit value :	0.915 mg/kg bw/day
Literature information :	Chemical Safety Report
Limit value type :	DNEL/DMEL (Consumer) (7-ACETYL-1,1,3,4,4,6-HEXAMETHYLTETRALINE ; CAS No. : 1506-02-1)
Exposure route :	Dermal
Exposure frequency :	Long Term (repeated), systemic
Limit value :	0.305 mg/kg bw/day
Literature information :	Chemical Safety Report
Limit value type :	DNEL/DMEL (Consumer) (7-ACETYL-1,1,3,4,4,6-HEXAMETHYLTETRALINE ; CAS No. : 1506-02-1)
Exposure route :	Inhalation
Exposure frequency :	Short term (acute), systemic
Limit value :	0.131 mg/m ³
Literature information :	Chemical Safety Report
Limit value type :	DNEL/DMEL (Consumer) (7-ACETYL-1,1,3,4,4,6-HEXAMETHYLTETRALINE ; CAS No. : 1506-02-1)
Exposure route :	Inhalation
Exposure frequency :	Long Term (repeated), systemic
Limit value :	0.0435 mg/m ³
Literature information :	Chemical Safety Report
Limit value type :	DNEL/DMEL (Consumer) (7-ACETYL-1,1,3,4,4,6-HEXAMETHYLTETRALINE ; CAS No. : 1506-02-1)
Exposure route :	Oral
Exposure frequency :	Short term (acute), systemic
Limit value :	1.2 mg/kg bw/day
Literature information :	Chemical Safety Report

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Limit value type : DNEL/DMEL (Consumer) (7-ACETYL-1,1,3,4,4,6-HEXAMETHYLTETRALINE ; CAS No. : 1506-02-1)
Exposure route : Oral
Exposure frequency : Long Term (repeated), systemic
Limit value : 0.0125 mg/kg bw/day
Literature infomation : Chemical Safety Report

Limit value type : DNEL/DMEL (Industrial) (7-ACETYL-1,1,3,4,4,6-HEXAMETHYLTETRALINE ; CAS No. : 1506-02-1)
Exposure route : Dermal
Exposure frequency : Short term (acute), systemic
Limit value : 1.8 mg/kg bw/day
Literature infomation : Chemical Safety Report

Limit value type : DNEL/DMEL (Industrial) (7-ACETYL-1,1,3,4,4,6-HEXAMETHYLTETRALINE ; CAS No. : 1506-02-1)
Exposure route : Dermal
Exposure frequency : Long Term (repeated), systemic
Limit value : 0.61 mg/kg bw/day
Literature infomation : Chemical Safety Report

Limit value type : DNEL/DMEL (Industrial) (7-ACETYL-1,1,3,4,4,6-HEXAMETHYLTETRALINE ; CAS No. : 1506-02-1)
Exposure route : Inhalation
Exposure frequency : Short term (acute), systemic
Limit value : 0.525 mg/m³
Literature infomation : Chemical Safety Report

Limit value type : DNEL/DMEL (Industrial) (7-ACETYL-1,1,3,4,4,6-HEXAMETHYLTETRALINE ; CAS No. : 1506-02-1)
Exposure route : Inhalation
Exposure frequency : Long Term (repeated), systemic
Limit value : 0.175 mg/m³
Literature infomation : Chemical Safety Report

PNEC

Limit value type : PNEC (Aquatic, freshwater) (7-ACETYL-1,1,3,4,4,6-HEXAMETHYLTETRALINE ; CAS No. : 1506-02-1)
Exposure route : Water (Including sewage plant)
Limit value : 2.2 µg/l
Literature infomation : Chemical Safety Report

Limit value type : PNEC (Aquatic, intermittent release) (7-ACETYL-1,1,3,4,4,6-HEXAMETHYLTETRALINE ; CAS No. : 1506-02-1)
Exposure route : Water (Including sewage plant)
Limit value : 0.72 µg/l
Literature infomation : Chemical Safety Report

Limit value type : PNEC (Aquatic, marine water) (7-ACETYL-1,1,3,4,4,6-HEXAMETHYLTETRALINE ; CAS No. : 1506-02-1)
Exposure route : Water (Including sewage plant)
Limit value : 0.22 µg/l
Literature infomation : Chemical Safety Report

Limit value type : PNEC (Sediment, freshwater) (7-ACETYL-1,1,3,4,4,6-HEXAMETHYLTETRALINE ; CAS No. : 1506-02-1)
Limit value : 1.72 mg/kg sediment dw
Literature infomation : Chemical Safety Report

Limit value type : PNEC (Sediment, marine water) (7-ACETYL-1,1,3,4,4,6-HEXAMETHYLTETRALINE ; CAS No. : 1506-02-1)
Limit value : 0.345 mg/kg sediment dw



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Literature information : Chemical Safety Report
Limit value type : PNEC soil, freshwater (7-ACETYL-1,1,3,4,4,6-HEXAMETHYLTETRALINE ; CAS No. : 1506-02-1)
Exposure route : Soil
Limit value : 0.31 mg/kg soil dw
Literature information : Chemical Safety Report
Limit value type : PNEC (Secondary poisoning) (7-ACETYL-1,1,3,4,4,6-HEXAMETHYLTETRALINE ; CAS No. : 1506-02-1)
Limit value : 1.1 mg/kg food
Literature information : Chemical Safety Report
Limit value type : PNEC (Sewage treatment plant) (7-ACETYL-1,1,3,4,4,6-HEXAMETHYLTETRALINE ; CAS No. : 1506-02-1)
Exposure route : Water (Including sewage plant)
Limit value : 2.2 mg/l
Literature information : Chemical Safety Report

8.2 Exposure controls

When using do not eat, drink, smoke, sniff. Wash hands before breaks and after work.

Appropriate engineering controls

Provide adequate ventilation as well as local exhaust at critical locations. If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn.

Personal protection equipment

Eye/face protection

The use of safety glasses is recommended.

Skin protection

Hand protection

Use protective gloves. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. Breakthrough times and swelling properties of the material must be taken into consideration.

Suitable material : NR (natural rubber, natural latex)

Breakthrough time (maximum wearing time) : >480 min.

Thickness of the glove material : 1.60 mm

Body protection

Overall

Respiratory protection

Respiratory protection necessary at: exceeding exposure limit values Type : (FFP2) Handling larger quantities.

Container device with compressed air (DIN EN 137) / Filtering device (full mask or mouthpiece) with filter: Filter types: A, B, E, K. Class 1: Maximum permitted contaminant concentration in inhaled air = 1000 mL/m³ (0.1 % by vol.); class 2: maximum permitted contaminant concentration in inhaled air = 5000 mL/m³ (0.5 % by vol.); class 3: maximum permitted contaminant concentration in inhaled air = 10000 mL/m³ (1.0 % by vol.)

General health and safety measures

Full-face mask or mouthpiece with particulate filter: maximum use concentration for substances with exposure limits: P1 filter: up to a max. of 4 times the exposure limit. P2 filter: up to a max. of 15 times the exposure limit. P3 filter: up to a max. of 400 times the exposure limit.

Environmental exposure controls

Send to a hazardous waste incinerator facility under observation of official regulations.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

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Odour threshold in air : No data available

Safety relevant basis data

Approved packaging			Glass/RDL/Aluminium	
Physical state :			solid	
Colour :			off-white	
Odour :			musky	
Melting point/melting range :			106.9 °C	
Melting point/melting range :	(1013 hPa)	>	54 °C	
Initial boiling point and boiling range :			331.9 °C	
Initial boiling point and boiling range :	(1013 hPa)		331.9 °C	
Decomposition temperature :			No data available	
Decomposition temperature :	(1013 hPa)		not applicable	
Freezing point :			No data available	
Flash point (Closed Cup) :	>		100 °C	DIN EN 51578
Flammability (solid, gas) :			none	
Auto-ignition temperature :	>		400 °C	
Decomposition temperature			No data available	
Evaporation rate :			slowly evaporating	
Lower explosion limit :			No data available	
Upper explosion limit :			No data available	
Explosive properties :			none	
Vapour pressure :	(50 °C)	approx.	0.012 hPa	
Vapour pressure :	(20 °C)		hPa	
Vapour pressure :	(25 °C)		0.00068 hPa	
Surface tension (20°C)	(20 °C)		not applicable	
Vapour Density	(25 °C)		1	
Relative density (water = 1) :	(20 °C)	approx.	0.968	
Density :	(20 °C)	approx.	0.96 g/cm ³	
Water solubility :			0.2879	
Solubility in water :	(25 °C)		1.25 mg/l	
pH value :			not applicable	
Log Pow :			6.4	
Viscosity :	(20 °C)		not applicable	
Vapour density (air = 1) :	(1013 hPa / 20 °C)	approx.	1	
Oxidising properties :			none	
Refractive Index			no data available	

9.2 Other information

Justification for data waiving. pH value: The substance is not soluble in water. Viscosity: Testing can be waived because substance is a solid.

SECTION 10: Stability and reactivity

10.1 Reactivity

No known hazardous reactions.

10.2 Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3 Possibility of hazardous reactions

No hazardous reaction when handled and stored according to provisions.

10.4 Conditions to avoid

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Do not expose to temperatures above 50°C in original container.

10.5 Incompatible materials

Exothermic reaction with: oxidising agent strong acid . strong alkali

10.6 Hazardous decomposition products

Decomposition with: Carbon dioxide. Carbon monoxide (CO).

SECTION 11: Toxicological information

This mixture has not been subjected to Toxicological testing as an entity. According to the available data on the constituents the health classification criteria are met.

SECTION 12: Ecological information

This mixture has not been subjected to Ecotoxicological testing as an entity. According to the available data on the constituents the health classification criteria are met

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Send to a hazardous waste incinerator facility under observation of official regulations.

SECTION 14: Transport information

14.1 UN number

UN 3077

14.2 UN proper shipping name

Land transport (ADR/RID)

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (ACETYL HEXAMETHYL TETRALINE)

Sea transport (IMDG)

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (ACETYL HEXAMETHYL TETRALINE)

Air transport (ICAO-TI / IATA-DGR)

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (ACETYL HEXAMETHYL TETRALINE)

14.3 Transport hazard class(es)

Land transport (ADR/RID)

Class(es) : 9
Classification code : M7
Hazard identification number (Kemler No.) : 90
Tunnel restriction code : E
Special provisions : E 1
Hazard label(s) : 9 / N

Sea transport (IMDG)

Class(es) : 9
EmS-No. : F-A / S-F
Special provisions : LQ 5 KG · E 1 · Segregation Group: No/none
Hazard label(s) : 9 / N

Air transport (ICAO-TI / IATA-DGR)

Class(es) : 9



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Special provisions : E 1
Hazard label(s) : 9 / N

14.4 Packing group

III

14.5 Environmental hazards

Land transport (ADR/RID) : Yes
Sea transport (IMDG) : Yes (P)
Air transport (ICAO-TI / IATA-DGR) : Yes

14.6 Special precautions for user

None

SECTION 15: Regulatory information

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

National regulations

Water hazard class (WGK)

Class : strongly water pollutant according VwVwS

Other regulations, restrictions and prohibition regulations which apply

U.S. - Section 8(b) Inventory (TSCA)
Inventory - Japan - Existing and New Chemical Substances (ENCS)
Inventory - China - Inventory of Existing Chemical Substances (IECSC)
Inventory - Taiwan - Taiwan Chemical Substance Inventory (TCSI)
Inventory - Korea - Existing Chemicals Inventory (KECI/KECL) - Annex 1
Inventory - Philippines - Inventory of Chemicals and Chemical Substances (PICCS)
Inventory - Australia - Inventory of Chemical Substances (AICS)
Inventory - New Zealand - Inventory of Chemicals (NZIoC)

15.2 Chemical safety assessment

For this substance a chemical safety assessment has been carried out. Further information: see exposure scenarios attached to this safety data sheet.

SECTION 16: Other information

16.1 Indication of changes

08. DNEL/DMEL · 08. PNEC

16.2 Abbreviations and acronyms

a.i. = Active ingredient; ACGIH = American Conference of Governmental Industrial Hygienists (US); ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road; AFFF = Aqueous Film Forming Foam; AICS = Australian Inventory of Chemical Substances; AISE = International Association for Soaps, Detergents and Maintenance Products (joint project of AISE and CEFIC); AOAC = AOAC International (formerly Association of Official Analytical Chemists); aq. = Aqueous; Asia-PAC = Asia Pacific; ASTM = American Society of Testing and Materials (US); atm = Atmosphere(s); B.V. = Beperkt Venootschap (LTD = Limited); BCF = Bioconcentration Factor; bp = Boiling point at stated pressure; bw = Body weight; ca = (Circa) about; CAS No = Chemical Abstracts Service Number (see ACS - American Chemical Society); CEFIC = European Chemical Industry Council (established 1972); CEPA = Canadian Environmental Protection Act (CAN); CEPA = Canadian Environmental Protection Act (Canada); CIPAC = Collaborative International Pesticides Analytical Council; CLP = REGULATION (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures.; CoE = Council of Europe (EU); Conc = Concentration; cP = CentiPoise; CSNN = Chemical Substance Nomination & Notification (Taiwan); cSt = Centistokes; d = Day(s); DIN = Deutsches Institut für Normung e.V.; DNEL = Derived No-Effect Level; DSL = Domestic Substances List; DT50 = Time for 50% loss; half-life;



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EbC50 = Median effective concentration (biomass, e.g. of algae); EC = European Community; European Commission; EC50 = Median effective concentration; ECL = Existing Chemicals List (Korea); EINECS = European Inventory of Existing Commercial Chemical Substances (EU, outdated, now replaced by EC Number); ELINCS = European List of Notified (New) Chemicals; ENCS = Existing and New Chemical Substances Inventory (Japan); ErC50 = Median effective concentration (growth rate, e.g. of algae); EU = European Union; EWC = European Waste Catalogue; FAO = Food and Agriculture Organization (United Nations); FEMA = Flavor & Extract Manufacturers Association (USA); FLAVIS = Flavour Information System (EU); GIFAP = Groupement International des Associations Nationales de Fabricants de Produits Agrochimiques (now CropLife International); GRAS = Generally Recognized As Safe (USA); h = Hour(s); hPa = HectoPascal (unit of pressure); IARC = International Agency for Research on Cancer; IATA = International Air Transport Association; IC50 = Concentration that produces 50% inhibition; IECSC = Inventory of Existing Chemical Substances (China); IMDG Code = International Maritime Dangerous Goods Code; IMO = International Maritime Organization; ISO = International Organization for Standardization; IUCLID = International Uniform Chemical Information Database; IUPAC = International Union of Pure and Applied Chemistry; IVIS = In-Vitro Irritancy Score; JECFA = Joint Expert Committee on Food Additives (United Nations); kg = Kilogram; Kow = Distribution coefficient between n-octanol and water; kPa = KiloPascal (unit of pressure); LC50 = Concentration required to kill 50% of test organisms; LD50 = Dose required to kill 50% of test organisms; LEL = Lower Explosive Limit/Lower Explosion Limit; LOAEL = Lowest observed adverse effect level; LVE = Low Volume Exemption; mg = Milligram; min = Minute(s); ml = Milliliter; mmHg = Pressure equivalent to 1 mm of mercury (133.3 Pa); mp = Melting point; MRL = Maximum Residue Limit; MSDS = Material Safety Data Sheet; n.o.s. = Not Otherwise Specified; NDSL = Non-Domestic Substances List; NIOSH = National Institute for Occupational Safety and Health (US); NOAEL = No Observed Adverse Effect Level; NOEC = No observed effect concentration; NOEL = No Observable Effect Level; NOx = Oxides of Nitrogen; NZIoC = New Zealand Inventory of Chemicals; OECD = Organization for Economic Cooperation and Development; OEL = Occupational Exposure Limits; Pa = Pascal (unit of pressure); PBT = Persistent, Bioaccumulative or Toxic; pH = -log10 hydrogen ion concentration; PICCS = Philippine Inventory of Chemicals and Chemical Substances; pKa = -log10 acid dissociation constant; PNEC = Predicted No Effect Concentration; POPs = Persistent Organic Pollutants; ppb = Parts per billion; PPE = Personal Protection Equipment; ppm = Parts per million; ppt = Parts per trillion; PVC = Polyvinyl Chloride; QSAR = Quantitative Structure-Activity Relationship; REACH = Registration, Evaluation and Authorization of Chemicals (EU, see NCP); SI = International System of Units; STEL = Short-Term Exposure Limit; tech. = Technical grade; TSCA = Toxic Substances Control Act (US); TSCA = Toxic Substances Control Act (USA); TWA = Time-Weighted Average; UN = United Nations; vPvB = Very Persistent and Very Bioaccumulative; VwVwS = Verwaltungsvorschrift wassergefährdender Stoffe; WHO = World Health Organization = OMS; y = Year(s);

16.3 Key literature references and sources for data

None

16.4 Relevant H- and EUH-phrases (Number and full text)

H302	Harmful if swallowed.
H316	Causes mild skin irritation.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

16.5 Training advice

None

16.6 Additional information

None

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.