

SAFETY DATA SHEET

according to the OSHA
Hazard Communication Standard

Version 8.4
Revision Date 06/01/2026
Print Date 06/02/2026

SECTION 1. IDENTIFICATION

1.1 Product identifiers

Product name : Polyphenol metabolite library of standards

Product Number : PPMLS
Brand : Sigma-Aldrich

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

Identified uses : Laboratory chemicals, Synthesis of substances

Uses advised against : The product is being supplied under the TSCA R&D Exemption (40 CFR Section 720.36). It is the recipient's responsibility to comply with the requirements of the R&D exemption. The product may not be used for a non-exempt commercial purpose under TSCA unless appropriate consent is granted in writing by MilliporeSigma.

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
3050 SPRUCE ST
ST. LOUIS MO 63103
UNITED STATES

Telephone : +1 314 771-5765
Fax : +1 800 325-5052

1.4 Emergency telephone number

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-
527-3887 CHEMTREC (International) 24
Hours/day; 7 Days/week

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Hazards for the product as supplied

Acute toxicity (Oral) : Category 4

Acute toxicity (Inhalation)	: Category 4
Skin irritation	: Category 2
Serious eye damage	: Category 1
Skin sensitisation	: Category 1
Germ cell mutagenicity	: Category 2
Carcinogenicity	: Category 1B
Specific target organ toxicity - single exposure (Oral)	: Category 1 (Central nervous system, Blood)
Specific target organ toxicity - single exposure (Oral)	: Category 2 (Respiratory system)
Short-term (acute) aquatic hazard	: Category 1
Long-term (chronic) aquatic hazard	: Category 1

Other hazards

None known.

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H302 + H332 Harmful if swallowed or if inhaled.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H341 Suspected of causing genetic defects.
H350 May cause cancer.
H370 Causes damage to organs (Central nervous system, Blood) if swallowed.
H371 May cause damage to organs (Respiratory system) if swallowed.
H410 Very toxic to aquatic life with long lasting effects.

Supplemental Hazard Statements : Corrosive to the respiratory tract.

Precautionary statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing must not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
P302 + P352 IF ON SKIN: Wash with plenty of water.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P308 + P311 IF exposed or concerned: Call a POISON CENTER/ doctor.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P391 Collect spillage.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

CAS-No. : Not Assigned

Sigma-Aldrich - PPMLS

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Components

Chemical name	CAS No./Unique ID	Concentration (% w/w)	Trade secret
5,7-Dihydroxy-3-methoxyflavone	6665-74-3*	$\geq 0.5 - \leq 1.5$	TSC
(E)-3-(3,4-Dimethoxyphenyl)acrylic acid	14737-89-4*	$\geq 0.5 - \leq 1.5$	TSC
7-Hydroxy-3-(4-hydroxyphenyl)-2,3-dihydro-4H-chromen-4-one	17238-05-0*	$\geq 0.5 - \leq 1.5$	TSC
2',4',6'-Trihydroxyacetophenone monohydrate	249278-28-2*	$\geq 0.5 - \leq 1.5$	TSC
(+)-Catechin	154-23-4*	$\geq 0.5 - \leq 1.5$	TSC
3-Hydroxy-6H-benzo[c]chromen-6-one	1139-83-9*	$\geq 0.5 - \leq 1.5$	TSC
(3R,5R)-3,5-Bis{[(2E)-3-(3,4-dihydroxyphenyl)-2-propenoyl]oxy}-1,4-dihydroxycyclohexanecarboxylic acid	2450-53-5*	$\geq 0.5 - \leq 1.5$	TSC
O-Demethylangolesin, 97% CP	21255-69-6*	$\geq 0.5 - \leq 1.5$	TSC
4,9-Dimethoxy-7H-furo[3,2-g]chromen-7-one	482-27-9*	$\geq 0.5 - \leq 1.5$	TSC
3-(3-Hydroxy-4-methoxyphenyl)acrylic acid	25522-33-2*	$\geq 0.5 - \leq 1.5$	TSC
3-Hydroxy-4-methoxyphenylacetic acid	1131-94-8*	$\geq 0.5 - \leq 1.5$	TSC
4-Allyl-2-methoxyphenyl acetate	93-28-7*	$\geq 0.5 - \leq 1.5$	TSC
p-Propylphenol	645-56-7*	$\geq 0.5 - \leq 1.5$	TSC
4-Ethylguaiacol	2785-89-9*	$\geq 0.5 - \leq 1.5$	TSC
(-)-Epigallocatechin gallate	989-51-5*	$\geq 0.5 - \leq 1.5$	TSC
2-methoxy-4-methylphenol	93-51-6*	$\geq 0.5 - \leq 1.5$	TSC
2,6-Dimethoxyphenol	91-10-1*	$\geq 0.5 - \leq 1.5$	TSC

2',4'-Dihydroxyacetophenone	89-84-9*	$\geq 0.5 - \leq 1.5$	TSC
2,6-Dimethoxy-p-cresol	6638-05-7*	$\geq 0.5 - \leq 1.5$	TSC
3-hydroxyphenylacetic acid	621-37-4*	$\geq 0.5 - \leq 1.5$	TSC
2,3,4-Trihydroxybenzoic acid	610-02-6*	$\geq 0.5 - \leq 1.5$	TSC
Pterostilbene	537-42-8*	$\geq 0.5 - \leq 1.5$	TSC
Carvacrol	499-75-2*	$\geq 0.5 - \leq 1.5$	TSC
5-Hydroxy-1,4-naphthoquinone	481-39-0*	$\geq 0.5 - \leq 1.5$	TSC
3,4-dihydroxycinnamic acid	331-39-5*	$\geq 0.5 - \leq 1.5$	TSC
(-)-Procyanidin B3	23567-23-9*	$\geq 0.5 - \leq 1.5$	TSC
3-Hydroxy-4,5-dimethoxybenzoic acid	1916-08-1*	$\geq 0.5 - \leq 1.5$	TSC
4-Allylanisole	140-67-0*	$\geq 0.5 - \leq 1.5$	TSC
trans-cinnamic acid	140-10-3*	$\geq 0.5 - \leq 1.5$	TSC
p-Hydroxyethylbenzene	123-07-9*	$\geq 0.5 - \leq 1.5$	TSC
Pyrocatechol	120-80-9*	$\geq 0.5 - \leq 1.5$	TSC
4-Hydroxy-3-methoxycinnamic acid	1135-24-6*	$\geq 0.5 - \leq 1.5$	TSC
Resorcinol	108-46-3*	$\geq 0.5 - \leq 1.5$	TSC
Phenaceturic acid	500-98-1*	$\geq 0.5 - \leq 1.5$	TSC
3,5-Dimethoxyphenol	500-99-2*	$\geq 0.5 - \leq 1.5$	TSC
3-(4-Hydroxy-3-methoxyphenyl)propionic acid	1135-23-5*	$\geq 0.5 - \leq 1.5$	TSC
3,4-Dihydroxyphenylacetic acid	102-32-9*	$\geq 0.5 - \leq 1.5$	TSC
(-)-Epicatechin gallate	1257-08-5*	$\geq 0.5 - \leq 1.5$	TSC
(10E)-11,12-Dihydroxy-7,20-epoxyabieta-8,11,13-trien-20-one	5957-80-2*	$\geq 0.5 - \leq 1.5$	TSC
5,7-dihydroxy-2-(3,4-dihydroxyphenyl)-3-(β-D-galactopyranosyloxy)-	482-36-0*	$\geq 0.5 - \leq 1.5$	TSC

SECTION 4. FIRST AID MEASURES

General advice	: Show this safety data sheet to the doctor in attendance.
If inhaled	: After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.
In case of skin contact	: In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.
In case of eye contact	: After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.
If swallowed	: After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.
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
Protection of first-aiders	: For personal protection see section 8.
Notes to physician	: No data available

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	: Water Foam Carbon dioxide (CO ₂) Dry powder
Unsuitable extinguishing media	: For this substance/mixture no limitations of extinguishing agents are given.
Specific hazards during fire fighting	: Mixture with combustible ingredients.

Development of hazardous combustion gases or vapours possible in the event of fire.

Hazardous combustion products	: Carbon oxides Nitrogen oxides (NOx) Hydrogen chloride gas Sodium oxides
Specific extinguishing methods	: No data available
Further information	: Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.
Special protective equipment for fire-fighters	: Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: Advice for non-emergency personnel: Avoid generation and inhalation of dusts in all circumstances. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert. Advice for emergency responders: For personal protection see section 8.
Environmental precautions	: Do not let product enter drains.
Methods and materials for containment and cleaning up	: Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully. Dispose of properly. Clean up affected area. Avoid generation of dusts.

SECTION 7. HANDLING AND STORAGE

For precautions see section 2.2.

Advice on safe handling : Work under hood. Do not inhale substance/mixture.

Further information on storage conditions : Tightly closed.
Dry.
Keep in a well-ventilated place.
Keep locked up or in an area accessible only to qualified or authorised persons.

Storage class : 6.1C, Combustible, acute toxic Cat.3 / toxic compounds or compounds which causing chronic effects

Recommended storage temperature : -4 - 32 °F / -20 - -0 °C

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Resorcinol	108-46-3	TWA	10 ppm	ACGIH
		STEL	20 ppm	ACGIH
		ST	20 ppm 90 mg/m ³	NIOSH REL
		TWA	10 ppm 45 mg/m ³	NIOSH REL
Pyrocatechol	120-80-9	TWA	5 ppm	ACGIH
		TWA	5 mg/m ³	OSHA P0
		STEL	20 ppm	OSHA P0
		TWA	5 ppm 20 mg/m ³	NIOSH REL

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Resorcinol	108-46-3	Methemoglobin	In blood	During or at the end of the shift	5 % Hb	ACGIH BEI

Pyrocatechol	120-80-9	Methemoglobin	In blood	During or at the end of the shift	5 % Hb	ACGIH BEI
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Engineering measures : No data available

Personal protective equipment

Respiratory protection : required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: : Filter type P3

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Hand protection

Material : Nitrile rubber
Break through time : 480 min
Glove thickness : 0.11 mm
Protective index : Full contact
Manufacturer : KCL 741 Dermatril® L

Material : Nitrile rubber
Break through time : 480 min
Glove thickness : 0.11 mm
Protective index : Splash contact
Manufacturer : KCL 741 Dermatril® L

Remarks : Handle with impervious gloves.
This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Eye protection	: Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles
Skin and body protection	: protective clothing
Hygiene measures	: Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: solid
Color	: No data available
Odor	: No data available
Odor Threshold	: No data available
pH	: No data available
Melting point	: No data available
Boiling point/boiling range	: No data available
Flash point	: No data available
Evaporation rate	: No data available
Flammability (solid, gas)	: No data available
Flammability (liquids)	: No data available
Burning rate	: No data available
Upper explosion limit / Upper flammability limit	: No data available
Lower explosion limit / Lower flammability limit	: No data available
Vapor pressure	: No data available
Relative vapour density	: No data available
Relative density	: No data available
Density	: No data available

Water solubility	: No data available
Partition coefficient: n-octanol/water	: No data available
Autoignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, dynamic	: No data available
Viscosity, kinematic	: No data available
Flow time	: No data available
Explosive properties	: Not classified as explosive.
Oxidizing properties	: none
Particle characteristics	
Particle size	: No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.
Chemical stability	: The product is chemically stable under standard ambient conditions (room temperature) .
Possibility of hazardous reactions	: Violent reactions possible with: Strong oxidizing agents
Conditions to avoid	: no information available
Incompatible materials	: No data available
Hazardous decomposition products	: In the event of fire: see section 5

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Mixture

Acute toxicity

Acute toxicity estimate Oral - 334.77 mg/kg
(Calculation method)

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

Acute toxicity estimate Inhalation - 4 h - 1.5 mg/l - dust/mist (Calculation method)

Symptoms: Possible symptoms: , mucosal irritations, Cough, Shortness of breath, Possible damages: , damage of respiratory tract

Acute toxicity estimate Dermal - 3,462 mg/kg
(Calculation method)

Skin corrosion/irritation

Remarks: Mixture causes skin irritation.

Serious eye damage/eye irritation

Remarks: Mixture causes serious eye damage.

Respiratory or skin sensitization

Mixture may cause an allergic skin reaction.

Germ cell mutagenicity

Evidence of genetic defects.

Carcinogenicity

Possible carcinogen.

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Pyrocatechol)

IARC: 2B - Group 2B: Possibly carcinogenic to humans (3,4-dihydroxycinnamic acid)

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

Mixture causes damage to organs. - Central nervous system, Blood

Mixture may cause damage to organs. - Respiratory system

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

11.2 Additional Information

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

Handle in accordance with good industrial hygiene and safety practice.

Components

5,7-Dihydroxy-3-methoxyflavone

Acute toxicity

Acute toxicity estimate Oral - 500.1 mg/kg

(Expert judgement)

Remarks: The value is given in analogy to the following substances: O-Demethylangolesin, 97% CP

Inhalation: No data available

Dermal: No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

Remarks: Causes eye burns.

The value is given in analogy to the following substances: O-Demethylangolesin, 97% CP

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

(E)-3-(3,4-Dimethoxyphenyl)acrylic acid

Acute toxicity

Oral: No data available

Inhalation: No data available

Dermal: No data available

Skin corrosion/irritation

Remarks: Causes skin irritation.

Serious eye damage/eye irritation

Remarks: Causes serious eye irritation.

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

7-Hydroxy-3-(4-hydroxyphenyl)-2,3-dihydro-4H-chromen-4-one**Acute toxicity**

Oral: No data available

Inhalation: No data available

Dermal: No data available

Skin corrosion/irritation

Remarks: No data available

Serious eye damage/eye irritation

Remarks: No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

2',4',6'-Trihydroxyacetophenone monohydrate

Acute toxicity

Oral: No data available
Inhalation: No data available
Dermal: No data available
No data available

Skin corrosion/irritation

Remarks: Irritating to skin.
Information given is based on data obtained from similar substances.

Serious eye damage/eye irritation

Remarks: Eye irritation
Information given is based on data obtained from similar substances.

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available
No data available

Specific target organ toxicity - single exposure

Inhalation - May cause respiratory irritation.
Remarks: Information given is based on data obtained from similar substances.

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

(+)-Catechin

Acute toxicity

Oral: No data available
Inhalation: No data available
Dermal: No data available

Skin corrosion/irritation

Remarks: Causes skin irritation.

Serious eye damage/eye irritation

Remarks: Causes serious eye irritation.

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Acute toxicity

Oral: No data available

Inhalation: No data available

Dermal: No data available

Skin corrosion/irritation

Remarks: No data available

Serious eye damage/eye irritation

Remarks: No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

(3R,5R)-3,5-Bis{[(2E)-3-(3,4-dihydroxyphenyl)-2-propenoyl]oxy}-1,4-dihydroxycyclohexanecarboxylic acid**Acute toxicity**

Oral: No data available

Inhalation: No data available

Dermal: No data available

Skin corrosion/irritation

Remarks: Causes skin irritation.

The value is given in analogy to the following substances: Isochlorogenic Acid A

Serious eye damage/eye irritation

Remarks: Causes serious eye irritation.

The value is given in analogy to the following substances: Isochlorogenic Acid A

Respiratory or skin sensitization

May cause an allergic skin reaction. The value is given in analogy to the following substances:

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

O-Demethylangolesin, 97% CP**Acute toxicity**

Oral: No data available

Inhalation: No data available

Dermal: No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

Remarks: No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

4,9-Dimethoxy-7H-furo[3,2-g]chromen-7-one**Acute toxicity**

Acute toxicity estimate Oral - 5.1 mg/kg

(Expert judgement)

Acute toxicity estimate Inhalation - 4 h - 0.051 mg/l - dust/mist

(Expert judgement)

Acute toxicity estimate Dermal - 50.1 mg/kg

(Expert judgement)

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

Test Type: Ames test

Test system: S. typhimurium

Result: negative

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

3-(3-Hydroxy-4-methoxyphenyl)acrylic acid**Acute toxicity**

Oral: No data available

Inhalation: No data available

Dermal: No data available

Skin corrosion/irritation

Remarks: No data available

Serious eye damage/eye irritation

Remarks: No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

3-Hydroxy-4-methoxyphenylacetic acid**Acute toxicity**

LD50 Oral - 500.1 mg/kg

Oral: No data available

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation

Remarks: No data available

Serious eye damage/eye irritation

Remarks: No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

No data available

Specific target organ toxicity - single exposure

Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

4-Allyl-2-methoxyphenyl acetate

Acute toxicity

LD50 Oral - Rat - male and female - 1,670 mg/kg

Remarks: (ECHA)

Inhalation: No data available

LD50 Dermal - Rabbit - > 5,000 mg/kg

(OECD Test Guideline 402)

No data available

Skin corrosion/irritation

Skin - In vitro study

Result: negative

(OECD Test Guideline 439)

Remarks: No data available

Serious eye damage/eye irritation

Eyes - In vitro study

Result: negative

(OECD Test Guideline 492)

Respiratory or skin sensitization

Local lymph node assay (LLNA) - Mouse

(OECD Test Guideline 429)

Germ cell mutagenicity

No data available

Test Type: UDS (Unscheduled DNA synthesis assay)

Test system: rat hepatocytes

Result: negative

Test Type: Ames test

Test system: Escherichia coli/Salmonella typhimurium

Result: negative

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

p-Propylphenol

Acute toxicity

LD50 Oral - Mouse - 348 mg/kg
LC50 Inhalation - 4 h - 11 mg/l - vapour
(Acute toxicity estimate)
Inhalation: Harmful by inhalation.
LD50 Dermal - 1,100 mg/kg
Dermal: Harmful in contact with skin.
No data available

Skin corrosion/irritation

Remarks: Moderate skin irritation

Serious eye damage/eye irritation

Remarks: (in analogy to similar products)
Remarks: Causes serious eye damage.

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available
No data available

Specific target organ toxicity - single exposure

Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

4-Ethylguaiacol

Acute toxicity

Oral: No data available
Inhalation: No data available
Dermal: No data available
No data available

Skin corrosion/irritation

Remarks: No data available

Serious eye damage/eye irritation

Remarks: No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

(-)-Epigallocatechin gallate**Acute toxicity**

Oral: No data available

Inhalation: No data available

LD50 Dermal - Rat - > 1,860 mg/kg

Remarks: (RTECS)

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

Remarks: No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

2-methoxy-4-methylphenol**Acute toxicity**

LD50 Oral - Rat - 740 mg/kg

Remarks: (RTECS)

Sigma-Aldrich - PPMLS

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Behavioral:General anesthetic.
Inhalation: No data available
LD50 Dermal - Rabbit - 4,600 mg/kg
Remarks: (ECHA)
(in analogy to similar products)
The value is given in analogy to the following substances: guaiacol
No data available

Skin corrosion/irritation

Skin - Rabbit
Result: Skin irritation - 4 h
(OECD Test Guideline 404)
Remarks: (in analogy to similar products)
The value is given in analogy to the following substances: guaiacol

Serious eye damage/eye irritation

Eyes - Rabbit
Result: Causes serious eye irritation.
(OECD Test Guideline 405)
Remarks: (in analogy to similar products)
The value is given in analogy to the following substances: guaiacol

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

2,6-Dimethoxyphenol

Acute toxicity

LD50 Oral - Rat - 550 mg/kg
Remarks: Behavioral:General anesthetic.
Inhalation: No data available
Dermal: No data available
No data available

Skin corrosion/irritation

Remarks: No data available

Serious eye damage/eye irritation

Remarks: No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

2',4'-Dihydroxyacetophenone**Acute toxicity**

LD50 Oral - Rat - 2,830 mg/kg

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

Remarks: (RTECS)

Symptoms: Possible damages:, mucosal irritations

Dermal: No data available

Skin corrosion/irritation

Remarks: slight irritation

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Severe irritations

Remarks: (RTECS)

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

Acute oral toxicity - Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

Acute inhalation toxicity - Possible damages:, mucosal irritations

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

2,6-Dimethoxy-p-cresol**Acute toxicity**

LD50 Oral - Rat - 1,700 mg/kg

Remarks: (Lit.)

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation

Remarks: Causes skin irritation.

Serious eye damage/eye irritation

Remarks: Causes serious eye irritation.

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

3-hydroxyphenylacetic acid**Acute toxicity**

Oral: No data available

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation

Remarks: No data available

Serious eye damage/eye irritation

Remarks: No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

No data available

Specific target organ toxicity - single exposure

Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

2,3,4-Trihydroxybenzoic acid**Acute toxicity**

Oral: No data available

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation

Remarks: No data available

Serious eye damage/eye irritation

Remarks: No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

No data available

Specific target organ toxicity - single exposure

Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Pterostilbene

Acute toxicity

Oral: No data available
Inhalation: No data available
Dermal: No data available
No data available

Skin corrosion/irritation

Remarks: No data available

Serious eye damage/eye irritation

Remarks: No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available
No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Carvacrol

Acute toxicity

LD50 Oral - Rat - male and female - 810 mg/kg
(OECD Test Guideline 401)
Inhalation: No data available
Dermal: No data available

Skin corrosion/irritation

Skin - Rabbit
Result: Corrosive - 4 h
(OECD Test Guideline 404)
Skin - Rabbit
Result: Severe skin irritation - 24 h

Serious eye damage/eye irritation

Remarks: No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

Test Type: Ames test

Test system: Escherichia coli/Salmonella typhimurium

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: Chinese hamster ovary cells

Result: negative

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

5-Hydroxy-1,4-naphthoquinone**Acute toxicity**

LD50 Oral - Rat - 112 mg/kg

Remarks: (Lit.)

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation

Remarks: No data available

Serious eye damage/eye irritation

Remarks: No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

3,4-dihydroxycinnamic acid**Acute toxicity**

Oral: No data available

Inhalation: No data available

Dermal: No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

Suspected of causing cancer.

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

(-)-Procyanidin B3**Acute toxicity**

Oral: No data available

Inhalation: No data available

Dermal: No data available

Skin corrosion/irritation

Remarks: Causes skin irritation.

Serious eye damage/eye irritation

Remarks: Causes serious eye irritation.

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

3-Hydroxy-4,5-dimethoxybenzoic acid**Acute toxicity**

Oral: No data available

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation

Remarks: No data available

Serious eye damage/eye irritation

Remarks: No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

No data available

Specific target organ toxicity - single exposure

Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

4-Allylanisole**Acute toxicity**

LD50 Oral - Rat - female - > 300 - < 2,000 mg/kg
(OECD Test Guideline 423)

Inhalation: No data available

LD50 Dermal - Rabbit - > 5,000 mg/kg

Remarks: (RTECS)

No data available

Skin corrosion/irritation

Skin - In vitro study

Result: Skin irritation - 1 h
(OECD Test Guideline 439)

Serious eye damage/eye irritation

Eyes - In vitro study

Result: Eye irritation - 30 min
(OECD Test Guideline 492)

Respiratory or skin sensitization

In vitro study - In vitro study

Result: Causes sensitisation.
(OECD Test Guideline 442D)

Germ cell mutagenicity

Suspected of causing genetic defects.

Test Type: Ames test

Test system: *S. typhimurium*

Result: negative

Carcinogenicity

Suspected of causing cancer.

Reproductive toxicity

No data available

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

trans-cinnamic acid**Acute toxicity**

LD50 Oral - Rat - 2,500 mg/kg

Remarks: (RTECS)

The value is given in analogy to the following substances: Cinnamic acid

Inhalation: No data available

LD50 Dermal - Rabbit - > 5,000 mg/kg

Remarks: (External MSDS)

Skin corrosion/irritation

Skin - in vitro assay

Result: No skin irritation - 3 - 60 min
(OECD Test Guideline 431)

Serious eye damage/eye irritation

Remarks: Causes serious eye irritation.
(ECHA)

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

Test Type: Ames test

Test system: Escherichia coli/Salmonella typhimurium

Result: negative

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

p-Hydroxyethylbenzene**Acute toxicity**

LD50 Oral - Rat - male and female - > 2,000 mg/kg
(OECD Test Guideline 401)

Inhalation: No data available

Inhalation: Irritating to respiratory system.

LD50 Dermal - Rabbit - > 5,000 mg/kg

Remarks: (ECHA)

LD50 Dermal - Rat - > 5,000 mg/kg

Remarks: (HSDB)

No data available

Skin corrosion/irritation

Skin - Rabbit

Result: No eye irritation - 24 h

Remarks: (ECHA)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Risk of serious damage to eyes.

Remarks: (ECHA)

Respiratory or skin sensitization

Draize Test - Guinea pig

Result: negative
(OECD Test Guideline 406)

Germ cell mutagenicity

Test Type: Ames test
Test system: Escherichia coli/Salmonella typhimurium
Result: negative
Test Type: In vitro mammalian cell gene mutation test
Test system: Human lymphocytes
Result: negative
Test Type: In vitro mammalian cell gene mutation test
Test system: Chinese hamster lung cells
Result: negative
Method: OECD Test Guideline 474
Species: Mouse - male and female - Red blood cells (erythrocytes)
Result: negative

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Pyrocatechol

Acute toxicity

LD50 Oral - Rat - male - 300 mg/kg
Remarks: (ECHA)
Inhalation: No data available
LD50 Dermal - Rat - male and female - 600 mg/kg
(OECD Test Guideline 402)
Remarks: (Regulation (EC) No 1272/2008, Annex VI)

Skin corrosion/irritation

Skin - Rabbit
Result: Irritating to skin. - 24 h
(Draize Test)

Serious eye damage/eye irritation

Eyes - Rabbit
Result: Causes serious eye damage. - 24 - 72 h
(Draize Test)
Remarks: (ECHA)

Respiratory or skin sensitization

Freund's complete adjuvant test - Guinea pig

Result: positive
Remarks: (ECHA)

Germ cell mutagenicity

Suspected of causing genetic defects.
Test Type: Ames test
Test system: Salmonella typhimurium
Result: negative
Test Type: In vitro mammalian cell gene mutation test
Test system: mouse lymphoma cells
Result: positive
Species: Rat - male
Result: positive
Remarks: (ECHA)

Carcinogenicity

Presumed to have carcinogenic potential for humans

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

4-Hydroxy-3-methoxycinnamic acid

Acute toxicity

LD50 Oral - Rat - 2,500 mg/kg

Remarks: (RTECS)

The value is given in analogy to the following substances: trans-cinnamic acid
The value is given in analogy to the following substances: Cinnamic acid

Inhalation: Irritating to respiratory system.

Dermal: No data available

Skin corrosion/irritation

Skin - in vitro assay

Result: No skin irritation - 3 - 60 min

(OECD Test Guideline 431)

Remarks: The value is given in analogy to the following substances: trans-cinnamic acid

Serious eye damage/eye irritation

Remarks: Causes serious eye irritation.

(ECHA)

The value is given in analogy to the following substances: trans-cinnamic acid

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

Test Type: Ames test

Test system: Escherichia coli/Salmonella typhimurium

Result: negative

Remarks: The value is given in analogy to the following substances: trans-cinnamic acid

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Resorcinol**Acute toxicity**

Acute toxicity estimate Oral - 500 mg/kg

(Expert judgement)

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Inhalation: No data available

LD50 Dermal - Rabbit - male - 2,830 mg/kg

Remarks: (ECHA)

Skin corrosion/irritation

Skin - Rabbit

Result: Irritating to skin. - 24 h

Remarks: (ECHA)

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Irreversible effects on the eye - 72 h

Remarks: (ECHA)

Respiratory or skin sensitization

Local lymph node assay (LLNA) - Mouse

Result: positive
(OECD Test Guideline 429)

Germ cell mutagenicity

Test Type: Ames test

Test system: Salmonella typhimurium

Result: negative

Test Type: Mutagenicity (mammal cell test): micronucleus.

Test system: Human lymphocytes

Result: positive

Test Type: sister chromatid exchange assay

Test system: Chinese hamster ovary cells

Result: positive

Remarks: (ECHA)

Test Type: In vitro mammalian cell gene mutation test

Test system: mouse lymphoma cells

Result: Positive results were obtained in some in vitro tests.

Species: Rat - male and female

Result: negative

Remarks: (ECHA)

Method: OECD Test Guideline 474

Species: Rat - male and female - Bone marrow

Result: negative

Species: Drosophila melanogaster - male and female

Result: negative

Remarks: (ECHA)

Species: Rat - male and female

Result: negative

Remarks: (ECHA)

Species: Rat - male and female

Result: negative

Remarks: (ECHA)

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

Oral - Causes damage to organs. - Central nervous system, Blood

Oral - May cause damage to organs. - Respiratory system

Specific target organ toxicity - repeated exposure

Aspiration hazard

No data available

Phenaceturic acid

Acute toxicity

Oral: No data available

Inhalation: No data available

Dermal: No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

Remarks: Causes serious eye irritation.

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

3,5-Dimethoxyphenol**Acute toxicity**

Oral: No data available

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation

Remarks: No data available

Serious eye damage/eye irritation

Remarks: No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

No data available

Specific target organ toxicity - single exposure

Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

3-(4-Hydroxy-3-methoxyphenyl)propionic acid**Acute toxicity**

Oral: No data available

LD50 Oral - 500.1 mg/kg

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation

Remarks: No data available

Serious eye damage/eye irritation

Remarks: No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

No data available

Specific target organ toxicity - single exposure

Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

3,4-Dihydroxyphenylacetic acid**Acute toxicity**

Oral: No data available

Inhalation: No data available

Dermal: No data available

Skin corrosion/irritation

Remarks: Causes skin irritation.

Serious eye damage/eye irritation

Remarks: Causes serious eye irritation.

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

(-)-Epicatechin gallate**Acute toxicity**

LD50 Oral - Mouse - > 1,000 mg/kg

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation

Remarks: No data available

Serious eye damage/eye irritation

Remarks: No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

(10E)-11,12-Dihydroxy-7,20-epoxyabieta-8,11,13-trien-20-one**Acute toxicity**

Oral: No data available

Inhalation: No data available

Dermal: No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

5,7-dihydroxy-2-(3,4-dihydroxyphenyl)-3-(β -D-galactopyranosyloxy)-4H-1-benzopyran-4-one

Acute toxicity

Oral: No data available

Inhalation: No data available

Dermal: No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard
No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

5,7-Dihydroxy-3-methoxyflavone:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 0.1 mg/l
Exposure time: 96 h
Remarks: The value is given in analogy to the following substances:
The value is given in analogy to the following substances: O-Demethylangolesin, 97% CP

M-Factor (Acute aquatic toxicity) : 10

M-Factor (Chronic aquatic toxicity) : 10

2',4',6'-Trihydroxyacetophenone monohydrate:

Toxicity to fish : Remarks: No data available

3-Hydroxy-6H-benzo[c]chromen-6-one:

Toxicity to fish : Remarks: No data available

O-Demethylangolesin, 97% CP:

Toxicity to fish : Remarks: No data available

M-Factor (Acute aquatic toxicity) : 10

3-Hydroxy-4-methoxyphenylacetic acid:

Toxicity to fish : Remarks: No data available

4-Allyl-2-methoxyphenyl acetate:

Toxicity to fish : Remarks: No data available

p-Propylphenol:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 11 mg/l
Exposure time: 96 h

4-Ethylguaiacol:

Toxicity to fish : Remarks: No data available

(-)-Epigallocatechin gallate:

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 3.4 mg/l
Exposure time: 72 h
Remarks: (ECHA)

2-methoxy-4-methylphenol:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 150 mg/l
Exposure time: 24 h

Ecotoxicology Assessment

Acute aquatic toxicity : Harmful to aquatic life.
The value is given in analogy to the following substances: guaiacol

2,6-Dimethoxyphenol:

Toxicity to fish : Remarks: No data available

2,6-Dimethoxy-p-cresol:

Toxicity to fish : Remarks: No data available

3-hydroxyphenylacetic acid:

Toxicity to fish : Remarks: No data available

2,3,4-Trihydroxybenzoic acid:

Toxicity to fish : Remarks: No data available

Pterostilbene:

Toxicity to fish : Remarks: No data available

Ecotoxicology Assessment

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

Carvacrol:

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): 6.17 mg/l
End point: mortality
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203

GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 6.06 mg/l
End point: Immobilization
Exposure time: 48 h
Test Type: semi-static test
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (microalgae)): 4.05 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes

NOEC (Pseudokirchneriella subcapitata (microalgae)): 1.25 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes

Toxicity to microorganisms : EC50 (activated sludge): 75.75 mg/l
Exposure time: 3 h
Analytical monitoring: yes
Method: OECD Test Guideline 209
GLP: yes

5-Hydroxy-1,4-naphthoquinone:

Toxicity to fish : Remarks: No data available

3-Hydroxy-4,5-dimethoxybenzoic acid:

Toxicity to fish : Remarks: No data available

4-Allylanisole:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 17.58 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
GLP: yes
Remarks: (ECHA)

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata): 10.35 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes

trans-cinnamic acid:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 32 mg/l
End point: Immobilization
Exposure time: 48 h
Test Type: semi-static test
Analytical monitoring: yes
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 19 mg/l
Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 201
GLP: yes

Ecotoxicology Assessment

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

p-Hydroxyethylbenzene:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 10.4 mg/l
End point: mortality
Exposure time: 96 h
Test Type: flow-through test
Analytical monitoring: yes
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 9 mg/l
End point: Immobilization
Exposure time: 48 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata): > 22 mg/l
Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 201
GLP: yes

Pyrocatechol:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 9.22 mg/l
End point: mortality
Exposure time: 96 h

Test Type: flow-through test
Analytical monitoring: yes
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1.09 mg/l
End point: Immobilization
Exposure time: 48 h
Test Type: semi-static test
Analytical monitoring: yes
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic plants : ErC50 (Chlorella vulgaris (Fresh water algae)): 22 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 201

4-Hydroxy-3-methoxycinnamic acid:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 32 mg/l
End point: Immobilization
Exposure time: 48 h
Test Type: semi-static test
Analytical monitoring: yes
Method: OECD Test Guideline 202
GLP: yes
Remarks: The value is given in analogy to the following substances:
The value is given in analogy to the following substances: trans-cinnamic acid

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 19 mg/l
Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 201
GLP: yes
Remarks: The value is given in analogy to the following substances:
The value is given in analogy to the following substances: trans-cinnamic acid

Ecotoxicology Assessment

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

Resorcinol:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 29.5 mg/l
Exposure time: 96 h
Test Type: flow-through test

Analytical monitoring: yes
Method: US-EPA

Toxicity to daphnia and other aquatic invertebrates	: LC50 (<i>Daphnia magna</i> (Water flea)): 1 mg/l End point: Immobilization Exposure time: 48 h Test Type: semi-static test Analytical monitoring: yes Method: OECD Test Guideline 202 GLP: yes
Toxicity to algae/aquatic plants	: ErC50 (<i>Pseudokirchneriella subcapitata</i> (green algae)): > 97 mg/l Exposure time: 72 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 201 GLP: yes
Toxicity to fish (Chronic toxicity)	: LC50 (<i>Oncorhynchus mykiss</i> (rainbow trout)): 260 mg/l Exposure time: 60 d Remarks: (ECHA)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC (<i>Daphnia magna</i> (Water flea)): ≥ 0.172 mg/l End point: reproduction rate Exposure time: 21 d Test Type: flow-through test Analytical monitoring: yes Method: OECD Test Guideline 211 GLP: yes
Toxicity to microorganisms	: EC50 (activated sludge): 79 mg/l Exposure time: 3 h Method: OECD Test Guideline 209 GLP: yes

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

3,5-Dimethoxyphenol:

Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): 2.7 mg/l
Exposure time: 48 h

3-(4-Hydroxy-3-methoxyphenyl)propionic acid:

Toxicity to fish : Remarks: No data available

LC50 : 2.9 mg/l
Exposure time: 96 h

(-)-Epicatechin gallate:

Toxicity to fish : Remarks: No data available

(10E)-11,12-Dihydroxy-7,20-epoxyabieta-8,11,13-trien-20-one:**Ecotoxicology Assessment**

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

Persistence and degradability**Components:****2',4',6'-Trihydroxyacetophenone monohydrate:**

Biodegradability : Remarks: No data available

3-Hydroxy-4-methoxyphenylacetic acid:

Biodegradability : Remarks: No data available

4-Allyl-2-methoxyphenyl acetate:

Biodegradability : aerobic
Inoculum: activated sludge
Concentration: 30 mg/l
Result: Readily biodegradable.
Biodegradation: 81 %
Exposure time: 28 d
Method: OECD Test Guideline 301F
GLP: yes

p-Propylphenol:

Biodegradability : Remarks: No data available

4-Ethylguaiacol:

Biodegradability : Remarks: No data available

2-methoxy-4-methylphenol:

Biodegradability : Remarks: No data available

2,6-Dimethoxyphenol:

Biodegradability : Remarks: No data available

2,6-Dimethoxy-p-cresol:

Biodegradability : Remarks: No data available

3-hydroxyphenylacetic acid:

Biodegradability : Remarks: No data available

2,3,4-Trihydroxybenzoic acid:

Biodegradability : Remarks: No data available

Pterostilbene:

Biodegradability : Remarks: No data available

Carvacrol:

Biodegradability : aerobic
Inoculum: activated sludge
Result: Not readily biodegradable.
Biodegradation: 18.1 %
Exposure time: 28 d
Method: OECD Test Guideline 301D
GLP: yes

5-Hydroxy-1,4-naphthoquinone:

Biodegradability : Remarks: No data available

3-Hydroxy-4,5-dimethoxybenzoic acid:

Biodegradability : Remarks: No data available

4-Allylanisole:

Biodegradability : aerobic
Inoculum: activated sludge
Concentration: 37 mg/l
Result: Not readily biodegradable.
Biodegradation: 48 %
Exposure time: 28 d
Method: OECD Test Guideline 301F
GLP: yes

p-Hydroxyethylbenzene:

Biodegradability : aerobic
Inoculum: activated sludge
Result: Readily biodegradable.
Biodegradation: 87 %
Exposure time: 28 d
Method: OECD Test Guideline 310
GLP: yes

Pyrocatechol:

Biodegradability : aerobic
Inoculum: activated sludge, non-adapted
Concentration: 100 mg/l

Result: Readily biodegradable.
Biodegradation: 96 %
Exposure time: 14 d
Method: OECD Test Guideline 301C

Resorcinol:

Biodegradability : aerobic
Inoculum: activated sludge, non-adapted
Concentration: 100 mg/l
Result: Readily biodegradable.
Biodegradation: 66.7 %
Exposure time: 14 d
Method: OECD Test Guideline 301C

BOD/COD : BOD/COD: 1.74 %

ThOD : 1,890 mg/g
Remarks: (Lit.)

BOD/ThOD : 61 %
Remarks: (Lit.)

3,5-Dimethoxyphenol:

Biodegradability : Remarks: No data available

3-(4-Hydroxy-3-methoxyphenyl)propionic acid:

Biodegradability : Remarks: No data available

(-)-Epicatechin gallate:

Biodegradability : Remarks: No data available

Bioaccumulative potential

Components:

2',4',6'-Trihydroxyacetophenone monohydrate:

Bioaccumulation : Remarks: No data available

(+)-Catechin:

Partition coefficient: n- : Pow: 0.51
octanol/water Remarks: Bioaccumulation is not expected.

O-Demethylangolesin, 97% CP:

Partition coefficient: n- : log Pow: 2.200
octanol/water

3-Hydroxy-4-methoxyphenylacetic acid:

Bioaccumulation : Remarks: No data available

Partition coefficient: n-octanol/water : log Pow: 0.96

4-Allyl-2-methoxyphenyl acetate:

Bioaccumulation : Remarks: No data available

Partition coefficient: n-octanol/water : log Pow: 2.71 (77 °F / 25 °C)
Method: (calculated)
Remarks: Bioaccumulation is not expected.

p-Propylphenol:

Bioaccumulation : Remarks: No data available

Partition coefficient: n-octanol/water : Pow: 3.09 (77 °F / 25 °C)

4-Ethylguaiacol:

Bioaccumulation : Remarks: No data available

(-)-Epigallocatechin gallate:

Partition coefficient: n-octanol/water : log Pow: 1.1 (68 °F / 20 °C)
Remarks: Bioaccumulation is not expected.

2-methoxy-4-methylphenol:

Bioaccumulation : Remarks: No data available

2,6-Dimethoxyphenol:

Bioaccumulation : Remarks: No data available

2,6-Dimethoxy-p-cresol:

Bioaccumulation : Remarks: No data available

3-hydroxyphenylacetic acid:

Bioaccumulation : Remarks: No data available

2,3,4-Trihydroxybenzoic acid:

Bioaccumulation : Remarks: No data available

Pterostilbene:

Bioaccumulation : Remarks: No data available

Partition coefficient: n-octanol/water : Remarks: No data available

octanol/water

Carvacrol:

Partition coefficient: n-octanol/water : log Pow: 3.33 (104 °F / 40 °C)
Method: OECD Test Guideline 117

5-Hydroxy-1,4-naphthoquinone:

Bioaccumulation : Remarks: No data available

3-Hydroxy-4,5-dimethoxybenzoic acid:

Bioaccumulation : Remarks: No data available

4-Allylanisole:

Partition coefficient: n-octanol/water : log Pow: 3.4 (77 °F / 25 °C)
pH: 7
Method: OECD Test Guideline 117
Remarks: Bioaccumulation is not expected.

p-Hydroxyethylbenzene:

Partition coefficient: n-octanol/water : log Pow: 2.1 (68 °F / 20 °C)
pH: 7
Method: OECD Test Guideline 117
GLP: yes
Remarks: Bioaccumulation is not expected.

Pyrocatechol:

Partition coefficient: n-octanol/water : log Pow: 0.88 (77 °F / 25 °C)
Method: OECD Test Guideline 117
Remarks: Bioaccumulation is not expected.

Resorcinol:

Partition coefficient: n-octanol/water : log Pow: 0.8 (68 °F / 20 °C)
Remarks: Bioaccumulation is not expected.

3,5-Dimethoxyphenol:

Bioaccumulation : Remarks: No data available

3-(4-Hydroxy-3-methoxyphenyl)propionic acid:

Bioaccumulation : Remarks: No data available

Partition coefficient: n-octanol/water : log Pow: 1.239

(-)-Epicatechin gallate:

Bioaccumulation : Remarks: No data available

(10Ξ)-11,12-Dihydroxy-7,20-epoxyabieta-8,11,13-trien-20-one:

Partition coefficient: n- : log Pow: 5.531
octanol/water

Mobility in soil

Components:

2',4',6'-Trihydroxyacetophenone monohydrate:

Stability in soil : Remarks: No data available

3-Hydroxy-4-methoxyphenylacetic acid:

Stability in soil : Remarks: No data available

4-Allyl-2-methoxyphenyl acetate:

Stability in soil : Remarks: No data available

p-Propylphenol:

Stability in soil : Remarks: No data available

4-Ethylguaiaicol:

Stability in soil : Remarks: No data available

2-methoxy-4-methylphenol:

Stability in soil : Remarks: No data available

2,6-Dimethoxyphenol:

Stability in soil : Remarks: No data available

2,6-Dimethoxy-p-cresol:

Stability in soil : Remarks: No data available

3-hydroxyphenylacetic acid:

Stability in soil : Remarks: No data available

2,3,4-Trihydroxybenzoic acid:

Stability in soil : Remarks: No data available

Pterostilbene:

Stability in soil : Remarks: No data available

5-Hydroxy-1,4-naphthoquinone:

Stability in soil : Remarks: No data available

3-Hydroxy-4,5-dimethoxybenzoic acid:

Stability in soil : Remarks: No data available

3,5-Dimethoxyphenol:

Stability in soil : Remarks: No data available

3-(4-Hydroxy-3-methoxyphenyl)propionic acid:

Stability in soil : Remarks: No data available

(-)-Epicatechin gallate:

Stability in soil : Remarks: No data available

Other adverse effects**Product:**

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Components:**2',4',6'-Trihydroxyacetophenone monohydrate:**

Additional ecological information : No data available

3-Hydroxy-4-methoxyphenylacetic acid:

Additional ecological information : No data available

4-Allyl-2-methoxyphenyl acetate:

Additional ecological information : No data available

p-Propylphenol:

Additional ecological information : No data available

4-Ethylguaiacol:

Additional ecological information : No data available

2-methoxy-4-methylphenol:

Additional ecological information : No data available

2,6-Dimethoxyphenol:

Additional ecological information : No data available

2',4'-Dihydroxyacetophenone:

Additional ecological information : Discharge into the environment must be avoided.

2,6-Dimethoxy-p-cresol:

Additional ecological information : No data available

3-hydroxyphenylacetic acid:

Additional ecological information : No data available

2,3,4-Trihydroxybenzoic acid:

Additional ecological information : No data available

Pterostilbene:

Additional ecological information : No data available

Carvacrol:

Additional ecological information : We have no quantitative data concerning the ecological effects of this product.

Further information on ecology

Discharge into the environment must be avoided.

5-Hydroxy-1,4-naphthoquinone:

Additional ecological information : No data available

3,4-dihydroxycinnamic acid:

Additional ecological information : Discharge into the environment must be avoided.

3-Hydroxy-4,5-dimethoxybenzoic acid:

Additional ecological information : No data available

4-Allylanisole:

Additional ecological information : No data available

p-Hydroxyethylbenzene:

Additional ecological information : Discharge into the environment must be avoided.

3,5-Dimethoxyphenol:

Additional ecological information : No data available

3-(4-Hydroxy-3-methoxyphenyl)propionic acid:

Additional ecological information : No data available

(-)-Epicatechin gallate:

Additional ecological information : No data available

Endocrine disrupting properties

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN/ID No. : UN 3077

Proper shipping name : Environmentally hazardous substance, solid, n.o.s.

(4-Allylanisole)

Class : 9

Packing group : III

Labels : Class 9 - Miscellaneous dangerous substances and articles

Packing instruction (cargo aircraft) : 956

Packing instruction (passenger aircraft) : 956

IMDG-Code

UN number : UN 3077

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (4-Allylanisole, Resorcinol)

Class : 9

Packing group : III

Labels : 9

EmS Code : F-A, S-F

Marine pollutant : yes

Transport in bulk according to IMO instruments

Not applicable for product as supplied.

National Regulations

49 CFR

Not regulated as a dangerous good

Poison Inhalation Hazard : No

Special precautions for user

Remarks : EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids. Packages smaller than or equal to 5 kg / L , not dangerous goods of Class 9

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

CERCLA Reportable Quantity

Listed substances in the product are at low enough levels to not be expected to exceed the RQ

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Pyrocatechol	120-80-9	>= 1 - < 5 %
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Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 112 (40 CFR 61):

Pyrocatechol	120-80-9	>= 1 - < 5 %
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This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM Intermediate or Final VOC's (40 CFR 60.489):

Resorcinol	108-46-3	>= 1 - < 5 %
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Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

Resorcinol	108-46-3	>= 1 - < 5 %
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The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Resorcinol	108-46-3	>= 1 - < 5 %
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This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any priority pollutants related to the U.S. Clean Water Act

US State Regulations

Massachusetts Right To Know

Resorcinol	108-46-3
Pyrocatechol	120-80-9
p-Hydroxyethylbenzene	123-07-9

Pennsylvania Right To Know

Resorcinol	108-46-3
Pyrocatechol	120-80-9
p-Hydroxyethylbenzene	123-07-9
(+)-Catechin	154-23-4

Maine Chemicals of High Concern

Product does not contain any listed chemicals

Vermont Chemicals of High Concern

4-Allylanisole	140-67-0
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Washington Chemicals of High Concern

4-Allylanisole	140-67-0
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California Prop. 65

WARNING: This product can expose you to chemicals including Pyrocatechol, 4-Allylanisole, 3,4-dihydroxycinnamic acid, which is/are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov. **The components of this product are reported in the following inventories:**

US TSCA : Product contains substance(s) not listed on TSCA inventory.

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

ACGIH	: USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	: ACGIH - Biological Exposure Indices (BEI)
NIOSH REL	: USA. NIOSH Recommended Exposure Limits
OSHA P0	: USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
ACGIH / TWA	: 8-hour, time-weighted average
ACGIH / STEL	: Short-term exposure limit
NIOSH REL / TWA	: Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
NIOSH REL / ST	: STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
OSHA P0 / TWA	: 8-hour time weighted average
OSHA P0 / STEL	: Short-term exposure limit

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonised System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification 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; 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 Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; 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; MSHA - Mine Safety and Health Administration; n.o.s. - Not

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Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organisation 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; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; 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

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. 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.

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