

FORMULA 86 (delayed action mouse maker)

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

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

1.1. Product identifier

Product form	: Mixture
Trade name	: FORMULA 86 (delayed action mouse maker) FO-0125
UFI	: 8M4U-9953-X00Q-XR1E
Product code	: FO-0125
Type of product	: Perfumes, fragrances
Product group	: Trade product

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

1.2.1. Relevant identified uses

Main use category	: Professional use, Industrial use
Industrial/Professional use spec	: Industrial For professional use only
Use of the substance/mixture	: Perfumes, fragrances
Function or use category	: Odour agents

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Fragrance Orchard

Neutrino,
Albert Road,
Essex CM7 3JQ
GB - United Kingdom

1.4. Emergency telephone number

Emergency number : +44 (0) 1376 555185

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Skin sensitisation, Category 1	H317
Hazardous to the aquatic environment – Chronic Hazard, Category 2	H411
Full text of H- and EUH-statements: see section 16	

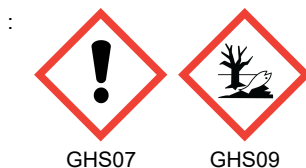
Adverse physicochemical, human health and environmental effects

Toxic to aquatic life with long lasting effects. May cause an allergic skin reaction.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



Signal word (CLP)

: Warning

Contains

: Aldehyde C-16; Cinnamic aldehyde; Triplal (Vertocitral); Acetyl Propionyl; 3(2H)-Furanone, 4-hydroxy-2,5-dimethyl-

Hazard statements (CLP)	: H317 - May cause an allergic skin reaction. H411 - Toxic to aquatic life with long lasting effects.
Precautionary statements (CLP)	: P261 - Avoid breathing dust/fume/gas/mist/vapours/spray. P272 - Contaminated work clothing should not be allowed out of the workplace. P273 - Avoid release to the environment. P280 - Wear protective gloves/protective clothing/eye protection/face protection/hearing protection. P302+P352 - IF ON SKIN: Wash with plenty of water. P321 - Specific treatment (see supplemental first aid instruction on this label).
Extra phrases	: For professional users only.

2.3. Other hazards

Contains no PBT/vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Dipropylene glycol monomethyl ether substance with national workplace exposure limit(s) (AT, BE, BG, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GI, GR, HR, HU, IE, IT, LT, LU, LV, MT, NL, PL, PT, RO, SE, SI, SK, NO, CH, TR); substance with a Community workplace exposure limit	CAS-No.: 34590-94-8 EC-No.: 252-104-2	31.3 – 62.6	Not classified
Aldehyde C-16	CAS-No.: 77-83-8 EC-No.: 201-061-8 REACH-no: 01-2119967770-28	12.5 – 25	Skin Sens. 1B, H317 Aquatic Chronic 2, H411
Ethyl maltol	CAS-No.: 4940-11-8 EC-No.: 225-582-5	1.3 – 2.5	Acute Tox. 4 (Oral), H302
Oxypheylon (Raspberry ketone) crystals	CAS-No.: 5471-51-2 EC-No.: 226-806-4	0.9 – 1.75	Acute Tox. 4 (Oral), H302
Aldehyde C-14	CAS-No.: 104-67-6 EC-No.: 203-225-4 REACH-no: 01-2119959333-34	0.8 – 1.6	Aquatic Chronic 3, H412
Cinnamic aldehyde	CAS-No.: 104-55-2 EC-No.: 203-213-9 REACH-no: 01-2119935242-45	0.8 – 1.5	Acute Tox. 4 (Dermal), H312 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Chronic 3, H412
Ethyl vanillin	CAS-No.: 121-32-4 EC-No.: 204-464-7 REACH-no: 01-211958961-24	0.6 – 1.25	Eye Irrit. 2, H319

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Oenanthic ether (Ethyl heptanoate)	CAS-No.: 106-30-9 EC-No.: 203-382-9	0.2 – 0.3	Flam. Liq. 3, H226 Aquatic Acute 1, H400 Aquatic Chronic 3, H412
Triplal (Vertocitral)	CAS-No.: 68039-49-6 EC-No.: 268-264-1	0.1 – 0.2315	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Chronic 3, H412
Benzaldehyde substance with national workplace exposure limit(s) (BG, FI, HU, LT, LV, PL)	CAS-No.: 100-52-7 EC-No.: 202-860-4 EC Index-No.: 605-012-00-5 REACH-no: 01-2119455540-44	0.1 – 0.2	Acute Tox. 4 (Oral), H302
acetyl propionyl substance with national workplace exposure limit(s) (DE, SI, CH)	CAS-No.: 600-14-6 EC-No.: 209-984-8	0.1 – 0.2	Flam. Liq. 2, H225 Eye Dam. 1, H318 Skin Sens. 1B, H317 STOT RE 2, H373
1,2-Propanediol substance with national workplace exposure limit(s) (GB, HR, IE, LT, LV, PL, NO)	CAS-No.: 57-55-6 EC-No.: 200-338-0 REACH-no: 01-2119456809-23	0.1 – 0.16	Not classified
Ethyl benzoate substance with national workplace exposure limit(s) (RO)	CAS-No.: 93-89-0 EC-No.: 202-284-3	0.1 – 0.1	Not classified
acetophenone substance with national workplace exposure limit(s) (BE, BG, DK, ES, FI, HU, IE, LT, LV, PL, PT, RO)	CAS-No.: 98-86-2 EC-No.: 202-708-7 EC Index-No.: 606-042-00-1 REACH-no: 01-2119533169-37	0.1 – 0.1	Acute Tox. 4 (Oral), H302 Eye Irrit. 2, H319
Propanoic acid substance with national workplace exposure limit(s) (AT, BE, BG, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GI, GR, HR, HU, IE, IT, LT, LU, LV, MT, NL, PL, PT, RO, SE, SI, SK, NO, CH, TR); substance with a Community workplace exposure limit	CAS-No.: 79-09-4 EC-No.: 201-176-3 EC Index-No.: 607-089-00-0	0.1 – 0.1	Flam. Liq. 3, H226 Skin Corr. 1B, H314 STOT SE 3, H335
3(2H)-Furanone, 4-hydroxy-2,5-dimethyl-	CAS-No.: 3658-77-3 EC-No.: 222-908-8	0 – 0.04	Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314 Eye Irrit. 2, H319 Skin Sens. 1A, H317
decyl alcohol substance with national workplace exposure limit(s) (BG, DE, LT, LV, RO, CH)	CAS-No.: 112-30-1 EC-No.: 203-956-9	0 – 0.0028	Aquatic Chronic 3, H412
Aldehyde C-6 substance with national workplace exposure limit(s) (FI, PL)	CAS-No.: 66-25-1 EC-No.: 200-624-5	0 – 0.0007	Flam. Liq. 3, H226

Specific concentration limits:

Name	Product identifier	Specific concentration limits
Propanoic acid	CAS-No.: 79-09-4 EC-No.: 201-176-3 EC Index-No.: 607-089-00-0	(10 ≤C < 100) STOT SE 3, H335 (10 ≤C < 25) Eye Irrit. 2, H319 (10 ≤C < 25) Skin Irrit. 2, H315 (25 ≤C < 100) Skin Corr. 1B, H314

Full text of H- and EUH-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Allow affected person to breathe fresh air. Allow the victim to rest.
First-aid measures after skin contact	: Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. If skin irritation or rash occurs: Get medical advice/attention. Specific treatment (see Get medical advice/attention. on this label). If skin irritation occurs: Get medical advice/attention. Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists. Rinse eyes with water as a precaution.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Call a poison center or a doctor if you feel unwell.

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

Symptoms/effects	: Not expected to present a significant hazard under anticipated conditions of normal use.
Symptoms/effects after skin contact	: May cause an allergic skin reaction.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Sand. Water spray. Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media	: Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire	: Toxic fumes may be released.
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5.3. Advice for firefighters

Firefighting instructions	: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures	: Ventilate spillage area. Evacuate unnecessary personnel. Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapours/spray.
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6.1.2. For emergency responders

Protective equipment	: Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures	: Ventilate area.

6.2. Environmental precautions

Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment	: Collect spillage.
Methods for cleaning up	: Take up liquid spill into absorbent material. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.
Other information	: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

See Section 8. Exposure controls and personal protection. For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	: Ensure good ventilation of the work station. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour. Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapours/spray. Wear personal protective equipment.
Hygiene measures	: Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	: Keep only in the original container in a cool, well ventilated place away from : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container closed when not in use. Store in a well-ventilated place. Keep cool.
Incompatible products	: Strong bases. Strong acids.
Incompatible materials	: Sources of ignition. Direct sunlight.
Storage temperature	: 25 °C
Storage area	: Store in a well-ventilated place. Store away from heat.
Special rules on packaging	: Store in a closed container.
Packaging materials	: Do not store in corrodable metal.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

Dipropylene glycol monomethyl ether (34590-94-8)	
EU - Indicative Occupational Exposure Limit (IOEL)	
IOEL TWA	308 mg/m ³
IOEL TWA [ppm]	50 ppm
Remark	Possibility of significant uptake through the skin
Austria - Occupational Exposure Limits	
MAK (OEL TWA)	307 mg/m ³ (mixed isomers)
MAK (OEL TWA) [ppm]	50 ppm (mixed isomers)
MAK (OEL STEL)	614 mg/m ³ (isomers mixtures)

Dipropylene glycol monomethyl ether (34590-94-8)	
MAK (OEL STEL) [ppm]	100 ppm (isomers mixtures)
OEL chemical category	Skin notation
Belgium - Occupational Exposure Limits	
OEL TWA	308 mg/m ³
OEL TWA [ppm]	50 ppm
OEL chemical category	Skin, Skin notation
Bulgaria - Occupational Exposure Limits	
OEL TWA	308 mg/m ³
OEL TWA [ppm]	50 ppm
Croatia - Occupational Exposure Limits	
GVI (OEL TWA) [1]	308 mg/m ³
GVI (OEL TWA) [2]	50 ppm
OEL chemical category	Skin notation
Cyprus - Occupational Exposure Limits	
OEL TWA	308 mg/m ³
OEL TWA [ppm]	50 ppm
OEL chemical category	Skin-potential for cutaneous absorption
Czech Republic - Occupational Exposure Limits	
PEL (OEL TWA)	270 mg/m ³
OEL chemical category	Potential for cutaneous absorption
Denmark - Occupational Exposure Limits	
OEL TWA [1]	309 mg/m ³
OEL TWA [2]	50 ppm
OEL STEL	618 mg/m ³
OEL STEL [ppm]	100 ppm
OEL chemical category	Potential for cutaneous absorption
Estonia - Occupational Exposure Limits	
OEL TWA	308 mg/m ³
OEL TWA [ppm]	50 ppm
OEL chemical category	Skin notation
Finland - Occupational Exposure Limits	
HTP (OEL TWA) [1]	310 mg/m ³
HTP (OEL TWA) [2]	50 ppm
OEL chemical category	Potential for cutaneous absorption
France - Occupational Exposure Limits	
VME (OEL TWA)	308 mg/m ³ (restrictive limit)
VME (OEL TWA) [ppm]	50 ppm (restrictive limit)
OEL chemical category	Risk of cutaneous absorption

Dipropylene glycol monomethyl ether (34590-94-8)	
Germany - Occupational Exposure Limits (TRGS 900)	
AGW (OEL TWA) [1]	310 mg/m ³ (isomer mixture)
AGW (OEL TWA) [2]	50 ppm (isomer mixture)
Gibraltar - Occupational Exposure Limits	
OEL TWA	308 mg/m ³
OEL TWA [ppm]	50 ppm
OEL chemical category	Skin notation
Greece - Occupational Exposure Limits	
OEL TWA	600 mg/m ³
OEL TWA [ppm]	100 ppm
OEL STEL	900 mg/m ³
OEL STEL [ppm]	150 ppm
OEL chemical category	skin - potential for cutaneous absorption
Hungary - Occupational Exposure Limits	
AK (OEL TWA)	308 mg/m ³
Ireland - Occupational Exposure Limits	
OEL TWA [1]	308 mg/m ³ ((2-Methoxymethylethoxy)propanol)
OEL TWA [2]	50 ppm ((2-Methoxymethylethoxy)propanol)
OEL STEL	924 mg/m ³ (calculated (2-(2-Methoxypropoxy)-1-propanol)
OEL STEL [ppm]	150 ppm (calculated (2-(2-Methoxypropoxy)-1-propanol)
OEL chemical category	Potential for cutaneous absorption
Italy - Occupational Exposure Limits	
OEL TWA	308 mg/m ³
OEL TWA [ppm]	50 ppm
OEL chemical category	skin - potential for cutaneous absorption
Latvia - Occupational Exposure Limits	
OEL TWA	308 mg/m ³
OEL TWA [ppm]	50 ppm
OEL chemical category	skin - potential for cutaneous exposure
Lithuania - Occupational Exposure Limits	
IPRV (OEL TWA)	300 mg/m ³ (2-(2-Methoxypropoxy)-propanol)
IPRV (OEL TWA) [ppm]	50 ppm (2-(2-Methoxypropoxy)-propanol)
TPRV (OEL STEL)	450 mg/m ³ (2-(2-Methoxypropoxy)-propanol)
TPRV (OEL STEL) [ppm]	75 ppm (2-(2-Methoxypropoxy)-propanol)
OEL chemical category	Skin notation
Luxembourg - Occupational Exposure Limits	
OEL TWA	308 mg/m ³
OEL TWA [ppm]	50 ppm
OEL chemical category	Possibility of significant uptake through the skin

Dipropylene glycol monomethyl ether (34590-94-8)	
Malta - Occupational Exposure Limits	
OEL TWA	308 mg/m ³
OEL TWA [ppm]	50 ppm
OEL chemical category	Possibility of significant uptake through the skin
Netherlands - Occupational Exposure Limits	
TGG-8u (OEL TWA)	300 mg/m ³
TGG-8u (OEL TWA) [ppm]	48.7 ppm
Poland - Occupational Exposure Limits	
NDS (OEL TWA)	240 mg/m ³ (mixture of isomers: 1-(2-Methoxy-1-methylethoxy)propan-2-ol, 1-(2-Methoxy-2-methylethoxy)propan-2-ol and 2-(2-Methoxy-1-methylethoxy)propan-1-ol)
NDSch (OEL STEL)	480 mg/m ³ (mixture of isomers: 1-(2-Methoxy-1-methylethoxy)propan-2-ol, 1-(2-Methoxy-2-methylethoxy)propan-2-ol, 2-(2-Methoxy-1-methylethoxy)propan-1-ol)
Portugal - Occupational Exposure Limits	
OEL TWA	308 mg/m ³ (indicative limit value)
OEL TWA [ppm]	50 ppm (indicative limit value)
OEL STEL [ppm]	150 ppm
OEL chemical category	skin - potential for cutaneous exposure indicative limit value
Romania - Occupational Exposure Limits	
OEL TWA	308 mg/m ³
OEL TWA [ppm]	50 ppm
OEL chemical category	Skin notation
Slovakia - Occupational Exposure Limits	
NPHV (OEL TWA) [1]	308 mg/m ³
NPHV (OEL TWA) [2]	50 ppm
OEL chemical category	Potential for cutaneous absorption
Slovenia - Occupational Exposure Limits	
OEL TWA	308 mg/m ³
OEL TWA [ppm]	50 ppm
OEL STEL	308 mg/m ³
OEL STEL [ppm]	50 ppm
OEL chemical category	Potential for cutaneous absorption
Spain - Occupational Exposure Limits	
VLA-ED (OEL TWA) [1]	308 mg/m ³ (indicative limit value)
VLA-ED (OEL TWA) [2]	50 ppm (indicative limit value)
OEL chemical category	skin - potential for cutaneous absorption
Sweden - Occupational Exposure Limits	
NGV (OEL TWA)	300 mg/m ³
NGV (OEL TWA) [ppm]	50 ppm
KTV (OEL STEL)	450 mg/m ³
KTV (OEL STEL) [ppm]	75 ppm

Dipropylene glycol monomethyl ether (34590-94-8)	
OEL chemical category	Skin notation
United Kingdom - Occupational Exposure Limits	
WEL TWA (OEL TWA) [1]	308 mg/m ³
WEL TWA (OEL TWA) [2]	50 ppm
WEL STEL (OEL STEL)	924 mg/m ³ (calculated)
WEL STEL (OEL STEL) [ppm]	150 ppm (calculated)
WEL chemical category	Potential for cutaneous absorption
Norway - Occupational Exposure Limits	
Grenseverdi (OEL TWA) [1]	300 mg/m ³
Grenseverdi (OEL TWA) [2]	50 ppm
Korttidsverdi (OEL STEL)	375 mg/m ³ (value calculated)
Korttidsverdi (OEL STEL) [ppm]	75 ppm (value calculated)
OEL chemical category	Skin notation
Switzerland - Occupational Exposure Limits	
MAK (OEL TWA) [1]	300 mg/m ³ (aerosol, vapour)
MAK (OEL TWA) [2]	50 ppm (aerosol, vapour)
KZGW (OEL STEL)	300 mg/m ³ (aerosol, vapour)
KZGW (OEL STEL) [ppm]	50 ppm (aerosol, vapour)
USA - ACGIH - Occupational Exposure Limits	
ACGIH OEL TWA [ppm]	50 ppm (Dipropylene glycol methyl ether)
Benzaldehyde (100-52-7)	
Bulgaria - Occupational Exposure Limits	
OEL TWA	5 mg/m ³
Finland - Occupational Exposure Limits	
HTP (OEL TWA) [1]	4.4 mg/m ³
HTP (OEL TWA) [2]	1 ppm
HTP (OEL C)	17.4 mg/m ³
HTP (OEL C) [ppm]]	4 ppm
Hungary - Occupational Exposure Limits	
AK (OEL TWA)	5 mg/m ³
CK (OEL STEL)	10 mg/m ³
Latvia - Occupational Exposure Limits	
OEL TWA	5 mg/m ³
Lithuania - Occupational Exposure Limits	
IPRV (OEL TWA)	5 mg/m ³
Poland - Occupational Exposure Limits	
NDS (OEL TWA)	10 mg/m ³
NDSch (OEL STEL)	40 mg/m ³

acetyl propionyl (600-14-6)	
Germany - Occupational Exposure Limits (TRGS 900)	
AGW (OEL TWA) [1]	0.083 mg/m ³
AGW (OEL TWA) [2]	0.02 ppm
Chemical category	Skin notation, Skin sensitization
Slovenia - Occupational Exposure Limits	
OEL TWA	0.083 mg/m ³
OEL TWA [ppm]	0.02 ppm
OEL STEL	0.083 mg/m ³
OEL STEL [ppm]	0.02 ppm
OEL chemical category	Potential for cutaneous absorption
Switzerland - Occupational Exposure Limits	
MAK (OEL TWA) [1]	0.08 mg/m ³
MAK (OEL TWA) [2]	0.02 ppm
KZGW (OEL STEL)	0.16 mg/m ³
KZGW (OEL STEL) [ppm]	0.04 ppm
OEL chemical category	Sensitizer, Skin notation
1,2-Propanediol (57-55-6)	
Croatia - Occupational Exposure Limits	
GVI (OEL TWA) [1]	474 mg/m ³ (total vapor and particles) 10 mg/m ³ (particles)
GVI (OEL TWA) [2]	150 ppm
Ireland - Occupational Exposure Limits	
OEL TWA [1]	10 mg/m ³ (particulates) 470 mg/m ³ (total vapour and particulates)
OEL TWA [2]	150 ppm (total vapour and particulates)
OEL STEL	1410 mg/m ³ (calculated-particulates) 30 mg/m ³ (calculated)
OEL STEL [ppm]	450 ppm (calculated-total vapour and particulates)
Latvia - Occupational Exposure Limits	
OEL TWA	7 mg/m ³
Lithuania - Occupational Exposure Limits	
IPRV (OEL TWA)	7 mg/m ³
Poland - Occupational Exposure Limits	
NDS (OEL TWA)	100 mg/m ³ (vapor and inhalable fraction)
United Kingdom - Occupational Exposure Limits	
WEL TWA (OEL TWA) [1]	474 mg/m ³ (total vapour and particulates) 10 mg/m ³ (particulates)
WEL TWA (OEL TWA) [2]	150 ppm (total vapour and particulates)
WEL STEL (OEL STEL)	1422 mg/m ³ (calculated-total vapour and particulates) 30 mg/m ³ (calculated-particulate)

1,2-Propanediol (57-55-6)	
WEL STEL (OEL STEL) [ppm]	450 ppm (calculated-total vapour and particulates)
Norway - Occupational Exposure Limits	
Grenseverdi (OEL TWA) [1]	79 mg/m ³
Grenseverdi (OEL TWA) [2]	25 ppm
Korttidsverdi (OEL STEL)	118.5 mg/m ³ (value calculated)
Korttidsverdi (OEL STEL) [ppm]	37.5 ppm (value calculated)
Ethyl benzoate (93-89-0)	
Romania - Occupational Exposure Limits	
OEL TWA	200 mg/m ³
OEL TWA [ppm]	33 ppm
OEL STEL	300 mg/m ³
OEL STEL [ppm]	49 ppm
acetophenone (98-86-2)	
Belgium - Occupational Exposure Limits	
OEL TWA	50 mg/m ³
OEL TWA [ppm]	10 ppm
Bulgaria - Occupational Exposure Limits	
OEL TWA	5 mg/m ³
Denmark - Occupational Exposure Limits	
OEL TWA [1]	49 mg/m ³
OEL TWA [2]	10 ppm
OEL STEL	98 mg/m ³
OEL STEL [ppm]	20 ppm
Finland - Occupational Exposure Limits	
HTP (OEL TWA) [1]	25 mg/m ³
HTP (OEL TWA) [2]	5 ppm
Hungary - Occupational Exposure Limits	
AK (OEL TWA)	50 mg/m ³
Ireland - Occupational Exposure Limits	
OEL TWA [1]	49 mg/m ³
OEL TWA [2]	10 ppm
OEL STEL	147 mg/m ³ (calculated)
OEL STEL [ppm]	30 ppm (calculated)
Latvia - Occupational Exposure Limits	
OEL TWA	5 mg/m ³
Lithuania - Occupational Exposure Limits	
IPRV (OEL TWA)	5 mg/m ³
OEL chemical category	Skin notation

acetophenone (98-86-2)	
Poland - Occupational Exposure Limits	
NDS (OEL TWA)	50 mg/m ³
NDSch (OEL STEL)	100 mg/m ³
Portugal - Occupational Exposure Limits	
OEL TWA [ppm]	10 ppm
Romania - Occupational Exposure Limits	
OEL TWA	100 mg/m ³
OEL TWA [ppm]	20 ppm
OEL STEL	200 mg/m ³
OEL STEL [ppm]	41 ppm
Spain - Occupational Exposure Limits	
VLA-ED (OEL TWA) [1]	50 mg/m ³
VLA-ED (OEL TWA) [2]	10 ppm
USA - ACGIH - Occupational Exposure Limits	
ACGIH OEL TWA [ppm]	10 ppm
Propanoic acid (79-09-4)	
EU - Indicative Occupational Exposure Limit (IOEL)	
IOEL TWA	31 mg/m ³
IOEL TWA [ppm]	10 ppm
IOEL STEL	62 mg/m ³
IOEL STEL [ppm]	20 ppm
Austria - Occupational Exposure Limits	
MAK (OEL TWA)	31 mg/m ³
MAK (OEL TWA) [ppm]	10 ppm
MAK (OEL STEL)	62 mg/m ³
MAK (OEL STEL) [ppm]	20 ppm
Belgium - Occupational Exposure Limits	
OEL TWA	31 mg/m ³
OEL TWA [ppm]	10 ppm
OEL STEL	62 mg/m ³
OEL STEL [ppm]	20 ppm
Bulgaria - Occupational Exposure Limits	
OEL TWA	31 mg/m ³
OEL TWA [ppm]	10 ppm
OEL STEL	62 mg/m ³
OEL STEL [ppm]	20 ppm
Croatia - Occupational Exposure Limits	
GVI (OEL TWA) [1]	31 mg/m ³
GVI (OEL TWA) [2]	10 ppm

Propanoic acid (79-09-4)	
KGVI (OEL STEL)	62 mg/m ³
KGVI (OEL STEL) [ppm]	20 ppm
Cyprus - Occupational Exposure Limits	
OEL TWA	31 mg/m ³
OEL TWA [ppm]	10 ppm
OEL STEL	62 mg/m ³
OEL STEL [ppm]	20 ppm
Czech Republic - Occupational Exposure Limits	
PEL (OEL TWA)	30 mg/m ³
Denmark - Occupational Exposure Limits	
OEL TWA [1]	31 mg/m ³
OEL TWA [2]	10 ppm
OEL STEL	62 mg/m ³
OEL STEL [ppm]	20 ppm
Estonia - Occupational Exposure Limits	
OEL TWA	30 mg/m ³
OEL TWA [ppm]	10 ppm
OEL STEL	62 mg/m ³
OEL STEL [ppm]	20 ppm
Finland - Occupational Exposure Limits	
HTP (OEL TWA) [1]	31 mg/m ³
HTP (OEL TWA) [2]	10 ppm
HTP (OEL STEL)	61 mg/m ³
HTP (OEL STEL) [ppm]	20 ppm
France - Occupational Exposure Limits	
VME (OEL TWA)	31 mg/m ³ (indicative limit)
VME (OEL TWA) [ppm]	10 ppm (indicative limit)
VLE (OEL C/STEL)	62 mg/m ³ (indicative limit)
VLE (OEL C/STEL) [ppm]	20 ppm (indicative limit)
Germany - Occupational Exposure Limits (TRGS 900)	
AGW (OEL TWA) [1]	31 mg/m ³ (the risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
AGW (OEL TWA) [2]	10 ppm (the risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
Gibraltar - Occupational Exposure Limits	
OEL TWA	31 mg/m ³
OEL TWA [ppm]	10 ppm
OEL STEL	62 mg/m ³
OEL STEL [ppm]	20 ppm

Propanoic acid (79-09-4)	
Greece - Occupational Exposure Limits	
OEL TWA	30 mg/m ³
OEL TWA [ppm]	10 ppm
OEL STEL	60 mg/m ³
OEL STEL [ppm]	20 ppm
Hungary - Occupational Exposure Limits	
AK (OEL TWA)	31 mg/m ³
CK (OEL STEL)	62 mg/m ³
Ireland - Occupational Exposure Limits	
OEL TWA [1]	31 mg/m ³
OEL TWA [2]	10 ppm
OEL STEL	62 mg/m ³
OEL STEL [ppm]	20 ppm
Italy - Occupational Exposure Limits	
OEL TWA	31 mg/m ³
OEL TWA [ppm]	10 ppm
OEL STEL	62 mg/m ³
OEL STEL [ppm]	20 ppm
Latvia - Occupational Exposure Limits	
OEL TWA	31 mg/m ³
OEL TWA [ppm]	10 ppm
Lithuania - Occupational Exposure Limits	
IPRV (OEL TWA)	31 mg/m ³
IPRV (OEL TWA) [ppm]	10 ppm
TPRV (OEL STEL)	62 mg/m ³
TPRV (OEL STEL) [ppm]	20 ppm
Luxembourg - Occupational Exposure Limits	
OEL TWA	31 mg/m ³
OEL TWA [ppm]	10 ppm
OEL STEL	62 mg/m ³
OEL STEL [ppm]	20 ppm
Malta - Occupational Exposure Limits	
OEL TWA	31 mg/m ³
OEL TWA [ppm]	10 ppm
OEL STEL	62 mg/m ³
OEL STEL [ppm]	20 ppm
Netherlands - Occupational Exposure Limits	
TGG-8u (OEL TWA)	31 mg/m ³
TGG-8u (OEL TWA) [ppm]	10 ppm

Propanoic acid (79-09-4)	
TGG-15min (OEL STEL)	62 mg/m ³
TGG-15min (OEL STEL) [ppm]	20 ppm
Poland - Occupational Exposure Limits	
NDS (OEL TWA)	30 mg/m ³
NDSch (OEL STEL)	45 mg/m ³
Portugal - Occupational Exposure Limits	
OEL TWA	31 mg/m ³ (indicative limit value)
OEL TWA [ppm]	10 ppm (indicative limit value)
OEL STEL	62 mg/m ³ (indicative limit value)
OEL STEL [ppm]	20 ppm (indicative limit value)
Romania - Occupational Exposure Limits	
OEL TWA	31 mg/m ³
OEL TWA [ppm]	10 ppm
OEL STEL	62 mg/m ³
OEL STEL [ppm]	20 ppm
Slovakia - Occupational Exposure Limits	
NPHV (OEL TWA) [1]	31 mg/m ³
NPHV (OEL TWA) [2]	10 ppm
NPHV (OEL C)	62 mg/m ³
Slovenia - Occupational Exposure Limits	
OEL TWA	31 mg/m ³
OEL TWA [ppm]	10 ppm
OEL STEL	62 mg/m ³
OEL STEL [ppm]	20 ppm
Spain - Occupational Exposure Limits	
VLA-ED (OEL TWA) [1]	31 mg/m ³ (indicative limit value)
VLA-ED (OEL TWA) [2]	10 ppm (indicative limit value)
VLA-EC (OEL STEL)	62 mg/m ³
VLA-EC (OEL STEL) [ppm]	20 ppm
Sweden - Occupational Exposure Limits	
NGV (OEL TWA)	30 mg/m ³
NGV (OEL TWA) [ppm]	10 ppm
KTV (OEL STEL)	62 mg/m ³
KTV (OEL STEL) [ppm]	20 ppm
United Kingdom - Occupational Exposure Limits	
WEL TWA (OEL TWA) [1]	31 mg/m ³
WEL TWA (OEL TWA) [2]	10 ppm
WEL STEL (OEL STEL)	46 mg/m ³
WEL STEL (OEL STEL) [ppm]	15 ppm

Propanoic acid (79-09-4)	
Norway - Occupational Exposure Limits	
Grenseverdi (OEL TWA) [1]	30 mg/m ³
Grenseverdi (OEL TWA) [2]	10 ppm
Korttidsverdi (OEL STEL)	45 mg/m ³ (value calculated)
Korttidsverdi (OEL STEL) [ppm]	20 ppm (value calculated)
Switzerland - Occupational Exposure Limits	
MAK (OEL TWA) [1]	30 mg/m ³
MAK (OEL TWA) [2]	10 ppm
KZGW (OEL STEL)	60 mg/m ³
KZGW (OEL STEL) [ppm]	20 ppm
USA - ACGIH - Occupational Exposure Limits	
ACGIH OEL TWA [ppm]	10 ppm
decyl alcohol (112-30-1)	
Bulgaria - Occupational Exposure Limits	
OEL TWA	10 mg/m ³
Germany - Occupational Exposure Limits (TRGS 900)	
AGW (OEL TWA) [1]	66 mg/m ³ (the risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
AGW (OEL TWA) [2]	10 ppm (the risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
Latvia - Occupational Exposure Limits	
OEL TWA	10 mg/m ³
Lithuania - Occupational Exposure Limits	
IPRV (OEL TWA)	10 mg/m ³
Romania - Occupational Exposure Limits	
OEL TWA	100 mg/m ³
OEL TWA [ppm]	15 ppm
OEL STEL	200 mg/m ³
OEL STEL [ppm]	30 ppm
Switzerland - Occupational Exposure Limits	
MAK (OEL TWA) [1]	66 mg/m ³ (aerosol, vapour)
MAK (OEL TWA) [2]	10 ppm (aerosol, vapour)
KZGW (OEL STEL)	66 mg/m ³ (aerosol, vapour)
KZGW (OEL STEL) [ppm]	10 ppm (aerosol, vapour)
Aldehyde C-6 (66-25-1)	
Finland - Occupational Exposure Limits	
HTP (OEL STEL)	42 mg/m ³
HTP (OEL STEL) [ppm]	10 ppm

Aldehyde C-6 (66-25-1)

Poland - Occupational Exposure Limits

NDS (OEL TWA)	40 mg/m ³
NDSch (OEL STEL)	80 mg/m ³

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls: Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

Personal protective equipment:

Avoid all unnecessary exposure.

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection:

Chemical goggles or safety glasses. Safety glasses

8.2.2.2. Skin protection

Skin and body protection:

Wear suitable protective clothing

Hand protection:

Wear protective gloves.

8.2.2.3. Respiratory protection

Respiratory protection:

Wear appropriate mask

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: light yellow. amber. Conforms to standard.
Odour	: characteristic.
Odour threshold	: Not available
Melting point	: Not applicable
Freezing point	: Not available
Boiling point	: Not available
Flammability	: Not applicable
Explosive limits	: Not available
Lower explosion limit	: Not available
Upper explosion limit	: Not available
Flash point	: 87 °C
Auto-ignition temperature	: Not available
Decomposition temperature	: Not available
pH	: Not available
Viscosity, kinematic	: Not available
Solubility	: Not available
Partition coefficient n-octanol/water (Log Kow)	: Not available
Vapour pressure	: Not available
Vapour pressure at 50°C	: Not available
Density	: Not available
Relative density	: Not available
Relative vapour density at 20°C	: Not available
Particle characteristics	: Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Not established.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

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

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

Dipropylene glycol monomethyl ether (34590-94-8)

LD50 oral rat	5.35 g/kg (Source: NLM_HSDB)
LD50 dermal rabbit	9500 mg/kg (Source: NLM_CIP)

Aldehyde C-16 (77-83-8)

LD50 oral rat	5470 mg/kg (Source: NLM_CIP)
LD50 dermal rat	> 2000 mg/kg (Source: ECHA_API)

Ethyl maltol (4940-11-8)

LD50 oral rat	1150 mg/kg (Source: NLM_CIP)
LD50 oral	1200 mg/kg bodyweight
LD50 dermal rabbit	> 5000 mg/kg (Source: ECHA_API)

Oxypheylon (Raspberry ketone) crystals (5471-51-2)

LD50 oral rat	1320 mg/kg (Source: NLM_CIP)
LD50 dermal rat	> 2000 mg/kg (Source: ECHA_API)

Aldehyde C-14 (104-67-6)

LD50 oral rat	18500 mg/kg (Source: NLM_CIP)
LD50 dermal rat	> 2000 mg/kg (Source: ECHA_API)

Cinnamic aldehyde (104-55-2)

LD50 oral rat	2220 mg/kg (Source: NLM_CIP)
LD50 oral	2200 mg/kg bodyweight
LD50 dermal rabbit	1260 mg/kg (Source: EPA_HPVS)
LD50 dermal	1100 mg/kg bodyweight

Ethyl vanillin (121-32-4)

LD50 oral rat	1590 mg/kg (Source: NLM_CIP)
LD50 oral	3000 mg/kg bodyweight
LD50 dermal rat	> 2000 mg/kg (Source: ECHA_API)

Oenanthic ether (Ethyl heptanoate) (106-30-9)

LD50 oral rat	> 34640 mg/kg (Source: NLM_CIP)
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Triplal (Vertocitral) (68039-49-6)

LD50 oral	3900 mg/kg bodyweight
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Benzaldehyde (100-52-7)

LD50 oral rat	1292 mg/kg (Source: JAPAN_GHS)
LD50 dermal rabbit	> 1250 mg/kg (Source: JAPAN_GHS)

acetyl propionyl (600-14-6)	
LD50 oral rat	3 g/kg (Source: NLM_CIP)
LD50 oral	3000 mg/kg bodyweight
LD50 dermal rabbit	> 2000 mg/kg (Source: NIOSH)
LD50 dermal	2500 mg/kg bodyweight
1,2-Propanediol (57-55-6)	
LD50 oral rat	20 g/kg (Source: NLM_CIP)
LD50 dermal rabbit	20800 mg/kg (Source: NLM_CIP)
Ethyl benzoate (93-89-0)	
LD50 oral rat	2100 mg/kg (Source: NLM_CIP)
LD50 oral	2500 mg/kg bodyweight
acetophenone (98-86-2)	
LD50 oral rat	900 mg/kg (Source: JAPAN_GHS)
LD50 oral	500 mg/kg bodyweight
LD50 dermal rat	3300 mg/kg (Source: ECHA_API)
LC50 Inhalation - Rat	> 2.13 mg/l (Exposure time: 8 h Source: CHEMVIEW)
Propanoic acid (79-09-4)	
LD50 oral rat	351 mg/kg (Source: EFSA)
LD50 oral	3455 mg/kg bodyweight
LD50 dermal rat	3235 mg/kg (Source: ECHA_API)
LD50 dermal	3235 mg/kg bodyweight
LC50 Inhalation - Rat	> 19.7 mg/l (Exposure time: 1 h Source: ECHA_API)
3(2H)-Furanone, 4-hydroxy-2,5-dimethyl- (3658-77-3)	
LD50 oral	1608 mg/kg bodyweight
decyl alcohol (112-30-1)	
LD50 oral rat	4720 mg/kg (Source: NZ_CCID)
LD50 dermal rabbit	3560 mg/kg (Source: NLM_CIP)
Aldehyde C-6 (66-25-1)	
LD50 oral rat	4890 mg/kg (Source: NLM_CIP)
LD50 dermal rabbit	> 8100 mg/kg (Source: ECHA_API)
Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitisation	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
Propanoic acid (79-09-4)	
STOT-single exposure	May cause respiratory irritation.
STOT-repeated exposure	: Not classified

acetyl propionyl (600-14-6)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	: Not classified

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

No additional information available

11.2.2. Other information

Potential adverse human health effects and symptoms : Based on available data, the classification criteria are not met

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Toxic to aquatic life with long lasting effects.
Hazardous to the aquatic environment, short-term (acute) : Not classified
Hazardous to the aquatic environment, long-term (chronic) : Toxic to aquatic life with long lasting effects.

Dipropylene glycol monomethyl ether (34590-94-8)	
LC50 - Fish [1]	> 10000 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 - Crustacea [1]	1919 mg/l (Exposure time: 48 h - Species: Daphnia magna)

Aldehyde C-16 (77-83-8)	
LC50 - Fish [1]	4.2 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [semi-static] Source: ECHA)

Ethyl maltol (4940-11-8)	
LC50 - Fish [1]	> 85 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss Source: ECHA)

Aldehyde C-14 (104-67-6)	
LC50 - Fish [1]	569 mg/l 96 h
EC50 - Crustacea [1]	5.85 mg/l 48 h
EC50 - Other aquatic organisms [1]	5.94 mg/l 72 h

Ethyl vanillin (121-32-4)	
LC50 - Fish [1]	81.4 – 94.3 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through] Source: EPA)

Benzaldehyde (100-52-7)	
LC50 - Fish [1]	10.6 – 11.8 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-through] Source: EPA)
LC50 - Fish [2]	12.69 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static] Source: IUCLID)

1,2-Propanediol (57-55-6)	
LC50 - Fish [1]	51600 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static] Source: IUCLID)
LC50 - Fish [2]	41 – 47 ml/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static] Source: EPA)
EC50 - Crustacea [1]	> 1000 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
EC50 96h - Algae [1]	19000 mg/l (Species: Pseudokirchneriella subcapitata)

Ethyl benzoate (93-89-0)	
LC50 - Fish [1]	6.7 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through] Source: EPA)
acetophenone (98-86-2)	
LC50 - Fish [1]	162 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through] Source: EPA)
LC50 - Fish [2]	155 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static] Source: EPA)
Propanoic acid (79-09-4)	
LC50 - Fish [1]	> 1 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static] Source: IUCLID)
LC50 - Fish [2]	73 – 99.7 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static] Source: EPA)
EC50 72h - Algae [1]	45.8 mg/l (Species: Desmodesmus subspicatus)
EC50 96h - Algae [1]	43 mg/l (Species: Desmodesmus subspicatus)
decyl alcohol (112-30-1)	
LC50 - Fish [1]	2.2 – 2.5 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through] Source: EPA)
LC50 - Fish [2]	4.12 – 6.2 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static] Source: EPA)
EC50 - Crustacea [1]	3 mg/l (Exposure time: 48 h - Species: Daphnia magna)
Aldehyde C-6 (66-25-1)	
LC50 - Fish [1]	12 – 16.5 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through] Source: EPA)

12.2. Persistence and degradability

FORMULA 86 (delayed action mouse maker)	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

FORMULA 86 (delayed action mouse maker)	
Bioaccumulative potential	Not established.
Dipropylene glycol monomethyl ether (34590-94-8)	
Partition coefficient n-octanol/water (Log Pow)	0.35 (at 25 °C (at pH 7)
Aldehyde C-16 (77-83-8)	
Partition coefficient n-octanol/water (Log Pow)	2.4 (at 25 °C (cis isomer)
Ethyl maltol (4940-11-8)	
Partition coefficient n-octanol/water (Log Pow)	2.9 (at 25 °C)
Oxyphylon (Raspberry ketone) crystals (5471-51-2)	
Partition coefficient n-octanol/water (Log Pow)	1.33 (at 20 °C)
Aldehyde C-14 (104-67-6)	
Partition coefficient n-octanol/water (Log Pow)	3.6 (at 25 °C)
Cinnamic aldehyde (104-55-2)	
Partition coefficient n-octanol/water (Log Pow)	2.1065 (at 25 °C)

Ethyl vanillin (121-32-4)	
Partition coefficient n-octanol/water (Log Pow)	1.61 (at 25 °C)
Oenanthic ether (Ethyl heptanoate) (106-30-9)	
Partition coefficient n-octanol/water (Log Pow)	3.98 (at 35 °C (at pH 7)
Benzaldehyde (100-52-7)	
BCF - Fish [1]	(no significant bioaccumulation)
Partition coefficient n-octanol/water (Log Pow)	1.4 (at 25 °C)
1,2-Propanediol (57-55-6)	
BCF - Fish [1]	(1 dimensionless)
Partition coefficient n-octanol/water (Log Pow)	-1.07 (at 20.5 °C (at pH >=6.2-<=6.4)
Ethyl benzoate (93-89-0)	
Partition coefficient n-octanol/water (Log Pow)	2.59 (at 22.8 °C (at pH 6-7)
acetophenone (98-86-2)	
Partition coefficient n-octanol/water (Log Pow)	1.63 – 1.65
Propanoic acid (79-09-4)	
Partition coefficient n-octanol/water (Log Pow)	0.25 – 0.33
3(2H)-Furanone, 4-hydroxy-2,5-dimethyl- (3658-77-3)	
Partition coefficient n-octanol/water (Log Pow)	0.95 (at 20 °C (at pH 2.5)
decyl alcohol (112-30-1)	
Partition coefficient n-octanol/water (Log Pow)	4.5 (at 25 °C (at pH 6)
Aldehyde C-6 (66-25-1)	
Partition coefficient n-octanol/water (Log Pow)	2.3 (at 25 °C (at pH 5)

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

Additional information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

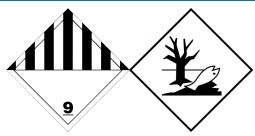
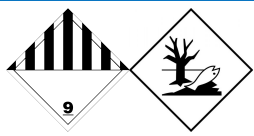
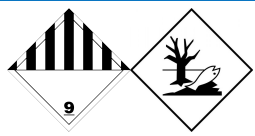
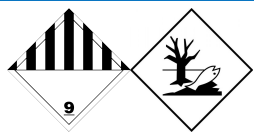
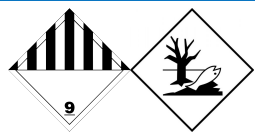
Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials : Avoid release to the environment.

HP Code

: HP3 - "Flammable:"
– flammable liquid waste: liquid waste having a flash point below 60 °C or waste gas oil, diesel and light heating oils having a flash point > 55 °C and ≤ 75 °C;
– flammable pyrophoric liquid and solid waste: solid or liquid waste which, even in small quantities, is liable to ignite within five minutes after coming into contact with air;
– flammable solid waste: solid waste which is readily combustible or may cause or contribute to fire through friction;
– flammable gaseous waste: gaseous waste which is flammable in air at 20 °C and a standard pressure of 101.3 kPa;
– water reactive waste: waste which, in contact with water, emits flammable gases in dangerous quantities;
– other flammable waste: flammable aerosols, flammable self-heating waste, flammable organic peroxides and flammable self-reactive waste.
HP13 - "Sensitising:" waste which contains one or more substances known to cause sensitising effects to the skin or the respiratory organs.
HP14 - "Ecotoxic:" waste which presents or may present immediate or delayed risks for one or more sectors of the environment

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
UN 3082	UN 3082	UN 3082	UN 3082	UN 3082
14.2. UN proper shipping name				
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Aldehyde C-16)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Aldehyde C-16)	Environmentally hazardous substance, liquid, n.o.s. (Aldehyde C-16)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Aldehyde C-16)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Aldehyde C-16)
Transport document description				
UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Aldehyde C-16), 9, III, (-)	UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Aldehyde C-16), 9, III, MARINE POLLUTANT	UN 3082 Environmentally hazardous substance, liquid, n.o.s. (Aldehyde C-16), 9, III	UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Aldehyde C-16), 9, III	UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Aldehyde C-16), 9, III
14.3. Transport hazard class(es)				
9	9	9	9	9
				
14.4. Packing group				
III	III	III	III	III
14.5. Environmental hazards				
Dangerous for the environment: Yes	Dangerous for the environment: Yes Marine pollutant: Yes	Dangerous for the environment: Yes	Dangerous for the environment: Yes	Dangerous for the environment: Yes
No supplementary information available				

14.6. Special precautions for user

Overland transport

Classification code (ADR)	: M6
Special provisions (ADR)	: 274, 335, 375, 601
Limited quantities (ADR)	: 5I
Excepted quantities (ADR)	: E1
Packing instructions (ADR)	: P001, IBC03, LP01, R001
Special packing provisions (ADR)	: PP1
Mixed packing provisions (ADR)	: MP19
Portable tank and bulk container instructions (ADR)	: T4
Portable tank and bulk container special provisions (ADR)	: TP1, TP29
Tank code (ADR)	: LGBV
Vehicle for tank carriage	: AT
Transport category (ADR)	: 3
Special provisions for carriage - Packages (ADR)	: V12
Special provisions for carriage - Loading, unloading and handling (ADR)	: CV13
Hazard identification number (Kemler No.)	: 90
Orange plates	:



Tunnel restriction code (ADR)	: -
EAC code	: •3Z

Transport by sea

Special provisions (IMDG)	: 274, 335, 969
Limited quantities (IMDG)	: 5 L
Excepted quantities (IMDG)	: E1
Packing instructions (IMDG)	: LP01, P001
Special packing provisions (IMDG)	: PP1
IBC packing instructions (IMDG)	: IBC03
Tank instructions (IMDG)	: T4
Tank special provisions (IMDG)	: TP1, TP29
EmS-No. (Fire)	: F-A
EmS-No. (Spillage)	: S-F
Stowage category (IMDG)	: A

Air transport

PCA Excepted quantities (IATA)	: E1
PCA Limited quantities (IATA)	: Y964
PCA limited quantity max net quantity (IATA)	: 30kgG
PCA packing instructions (IATA)	: 964
PCA max net quantity (IATA)	: 450L
CAO packing instructions (IATA)	: 964
CAO max net quantity (IATA)	: 450L
Special provisions (IATA)	: A97, A158, A197, A215
ERG code (IATA)	: 9L

Inland waterway transport

Classification code (ADN)	: M6
Special provisions (ADN)	: 274, 335, 375, 601
Limited quantities (ADN)	: 5 L
Excepted quantities (ADN)	: E1
Carriage permitted (ADN)	: T
Equipment required (ADN)	: PP
Number of blue cones/lights (ADN)	: 0

Rail transport

Classification code (RID)	: M6
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Special provisions (RID)	: 274, 335, 375, 601
Limited quantities (RID)	: 5L
Excepted quantities (RID)	: E1
Packing instructions (RID)	: P001, IBC03, LP01, R001
Special packing provisions (RID)	: PP1
Mixed packing provisions (RID)	: MP19
Portable tank and bulk container instructions (RID)	: T4
Portable tank and bulk container special provisions (RID)	: TP1, TP29
Tank codes for RID tanks (RID)	: LGBV
Transport category (RID)	: 3
Special provisions for carriage – Packages (RID)	: W12
Special provisions for carriage - Loading, unloading and handling (RID)	: CW13, CW31
Colis express (express parcels) (RID)	: CE8
Hazard identification number (RID)	: 90

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

REACH Annex XVII (Restriction List)

EU restriction list (REACH Annex XVII)		
Reference code	Applicable on	Entry title or description
3(a)	Oenanthic ether (Ethyl heptanoate) ; acetyl propionyl ; Propanoic acid ; Aldehyde C-6	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F
3(b)	FORMULA 86; Aldehyde C-16 ; Cinnamic aldehyde ; Triplal (Vertocitral) ; Benzaldehyde ; acetyl propionyl ; acetophenone ; Propanoic acid ; 3(2H)-Furanone, 4-hydroxy-2,5-dimethyl-	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10
3(c)	FORMULA 86 ; Aldehyde C-16 ; Aldehyde C-14 ; Cinnamic aldehyde ; Oenanthic ether (Ethyl heptanoate) ; Triplal (Vertocitral) ; decyl alcohol	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard class 4.1
40.	Oenanthic ether (Ethyl heptanoate) ; acetyl propionyl ; Propanoic acid ; Aldehyde C-6	Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not.

REACH Annex XIV (Authorisation List)

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Contains no substance(s) listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

Ozone Regulation (1005/2009)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 1005/2009 on substances that deplete the ozone layer)

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

15.1.2. National regulations**France**

Occupational diseases	
Code	Description
RG 84	Conditions caused by liquid organic solvents for professional use: saturated or unsaturated aliphatic or cyclic liquid hydrocarbons and mixtures thereof; liquid halogenated hydrocarbons; nitrated derivatives of aliphatic hydrocarbons; alcohols; glycols, glycol ethers; ketones; aldehydes; aliphatic and cyclic ethers, including tetrahydrofuran; esters; dimethylformamide and dimethylacetamine; acetonitrile and propionitrile; pyridine; dimethylsulfone and dimethylsulfoxide

Germany

Water hazard class (WGK)

: WGK 2, Significantly hazardous to water (Classification according to AwSV, Annex 1).

Storage class (LGK, TRGS 510)

: LGK 10 - Combustible liquids.

Joint storage table

LGK 1	LGK 2A	LGK 2B	LGK 3	LGK 4.1A
LGK 4.1B	LGK 4.2	LGK 4.3	LGK 5.1A	LGK 5.1B
LGK 5.1C	LGK 5.2	LGK 6.1A	LGK 6.1B	LGK 6.1C
LGK 6.1D	LGK 6.2	LGK 7	LGK 8A	LGK 8B
LGK 10	LGK 11	LGK 12	LGK 13	LGK 10-13

Joint storage not permitted for

: LGK 1, LGK 2A, LGK 5.1A, LGK 6.2, LGK 7.

Joint storage with restrictions permitted for

: LGK 4.1A, LGK 4.2, LGK 4.3, LGK 5.1B, LGK 5.1C, LGK 5.2.

Joint storage permitted for

: LGK 2B, LGK 3, LGK 4.1B, LGK 6.1A, LGK 6.1B, LGK 6.1C, LGK 6.1D, LGK 8A, LGK 8B, LGK 10, LGK 11, LGK 12, LGK 13, LGK 10-13.

List of sensitizing substances (TRGS 907)

: Contains sensitizing substances according TRGS 907.

Hazardous Incident Ordinance (12. BImSchV)

: Is not subject of the Hazardous Incident Ordinance (12. BImSchV)

Netherlands

ABM category

: A(2) - toxic for aquatic organisms, may have longterm hazardous effects in aquatic environment

SZW-lijst van kankerverwekkende stoffen

: Triplal (Vertocitral) is listed

SZW-lijst van mutagene stoffen

: Triplal (Vertocitral) is listed

SZW-lijst van reprotoxische stoffen – Borstvoeding

: None of the components are listed

SZW-lijst van reprotoxische stoffen –

: None of the components are listed

Vruchtbaarheid

SZW-lijst van reprotoxische stoffen – Ontwikkeling

: None of the components are listed

Denmark

Class for fire hazard

: Class III-1

Store unit

: 50 liter

Classification remarks

: Flammable according to the Danish Ministry of Justice; Emergency management guidelines for the storage of flammable liquids must be followed

Danish National Regulations : Young people below the age of 18 years are not allowed to use the product
Pregnant/breastfeeding women working with the product must not be in direct contact with the product

Switzerland

Storage class (LK) : LK 10/12 - Liquids

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Other information : None.

Full text of H- and EUH-statements:	
Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment – Acute Hazard, Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment – Chronic Hazard, Category 2
Aquatic Chronic 3	Hazardous to the aquatic environment – Chronic Hazard, Category 3
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 2	Flammable liquids, Category 2
Flam. Liq. 3	Flammable liquids, Category 3
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
Skin Corr. 1B	Skin corrosion/irritation, Category 1, Sub-Category 1B
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
Skin Sens. 1A	Skin sensitisation, category 1A
Skin Sens. 1B	Skin sensitisation, category 1B
STOT RE 2	Specific target organ toxicity – Repeated exposure, Category 2

Full text of H- and EUH-statements:

STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation
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The classification complies with : ATP 12

Safety Data Sheet (SDS), EU

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.