

Trade name: Duftstoff Orange**Product no.:** 166999**Current version :** 1.0.0, issued: 26.11.2020**Replaced version: -**, issued: -**Region:** MT**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**

Trade name

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

Fragrances

Uses advised against

No data available.

1.3 Details of the supplier of the safety data sheet**Address**

Koch-Chemie GmbH

Einsteinstr. 42

D-59423 Unna

Telephone no. +49-2303-9 86 70-0

Fax no. +49-2303-9 86 70-26

1.4 Emergency telephone number

No data available.

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture****Classification in accordance with Regulation (EC) No 1272/2008 (CLP)**

Acute Tox. 4; H332

Aquatic Acute 1; H400

Aquatic Chronic 1; H410

Asp. Tox. 1; H304

Eye Irrit. 2; H319

Flam. Liq. 3; H226

Skin Irrit. 2; H315

Skin Sens. 1; H317

Classification information

This product is assessed and classified using the methods and criteria below referred to in Article 9 of Regulation (EC) n° 1272/2008:

Physical hazards: determined through assessment data based on the methods or standards referred to in part 2 of Annex I to CLP

Health hazards and environmental hazards: determined through toxicological and ecotoxicological assessment data based on the methods or standards referred to in Part 3, 4 and 5 of Annex I to CLP.

2.2 Label elements**Labelling according to Regulation (EC) No 1272/2008 (CLP Regulation)****Hazard pictograms**

GHS02



GHS07



GHS08



GHS09

Signal word

Danger

Hazardous component(s) to be indicated on label:

Trade name: Duftstoff Orange**Product no.:** 166999**Current version :** 1.0.0, issued: 26.11.2020**Replaced version: -**, issued: -**Region:** MT

2-butoxyethanol
 Orange, sweet, ext.
 3,7,7-trimethylbicyclo[4.1.0]hept-3-ene
 geraniol
 linalyl acetate
 alpha-hexylcinnamaldehyde
 nerol
 2-(4-tert-butylbenzyl)propionaldehyde

Hazard statement(s)

H226 Flammable liquid and vapour.
 H304 May be fatal if swallowed and enters airways.
 H315 Causes skin irritation.
 H317 May cause an allergic skin reaction.
 H319 Causes serious eye irritation.
 H332 Harmful if inhaled.
 H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P261 Avoid breathing vapours/spray.
 P273 Avoid release to the environment.
 P280 Wear protective gloves/eye protection/face protection.
 P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
 P312 Call a POISON CENTER/doctor if you feel unwell.
 P331 Do NOT induce vomiting.

2.3 Other hazards

PBT assessment

According to the information provided in the supply chain, the mixture does not contain > 0.1% of a substance that is considered to be PBT.

vPvB assessment

According to the information provided in the supply chain, the mixture does not contain > 0.1% of a substance that is considered to be vPvB.

SECTION 3: Composition/information on ingredients**3.1 Substances**

Not applicable. The product is not a substance.

3.2 Mixtures**Hazardous ingredients**

No	Substance name		Additional information	
	CAS / EC / Index / REACH no	Classification (EC) 1272/2008 (CLP)	Concentration	%
1	2-butoxyethanol			
	111-76-2 203-905-0 603-014-00-0 01-2119475108-36	Acute Tox. 4; H302 Acute Tox. 4; H312 Acute Tox. 4; H332 Eye Irrit. 2; H319 Skin Irrit. 2; H315	>= 50,00 - < 70,00	wt%
2	Orange, sweet, ext.			
	8028-48-6 232-433-8 -	Asp. Tox. 1; H304 Flam. Liq. 3; H226 Skin Irrit. 2; H315	>= 25,00 - < 50,00	wt%

Trade name: Duftstoff Orange

Product no.: 166999

Current version : 1.0.0, issued: 26.11.2020

Replaced version: -, issued: -

Region: MT

	01-2119493353-35	Skin Sens. 1; H317 Aquatic Chronic 1; H410 Aquatic Acute 1; H400		
3	benzyl alcohol			
	100-51-6 202-859-9 603-057-00-5 01-2119492630-38	Acute Tox. 4; H302 Acute Tox. 4; H332 Eye Irrit. 2; H319	>= 5,00 - < 10,00	wt%
4	linalool			
	78-70-6 201-134-4 603-235-00-2 01-2119474016-42	Skin Irrit. 2; H315 Eye Irrit. 2; H319 Skin Sens. 1B; H317	< 5,00	wt%
5	citral			
	5392-40-5 226-394-6 605-019-00-3 01-2119462829-23	Eye Irrit. 2; H319 Skin Irrit. 2; H315 Skin Sens. 1B; H317	< 5,00	wt%
6	3,7,7-trimethylbicyclo[4.1.0]hept-3-ene			
	13466-78-9 236-719-3 - -	Asp. Tox. 1; H304 Flam. Liq. 3; H226 Skin Sens. 1; H317 Skin Irrit. 2; H315	< 2,50	wt%
7	geraniol			
	106-24-1 203-377-1 - 01-2119552430-49	Eye Dam. 1; H318 Skin Irrit. 2; H315 Skin Sens. 1; H317	< 2,50	wt%
8	linalyl acetate			
	115-95-7 204-116-4 - 01-2119454789-19	Skin Irrit. 2; H315 Eye Irrit. 2; H319 Skin Sens. 1; H317	< 2,50	wt%
9	alpha-hexylcinnamaldehyde			
	101-86-0 202-983-3 - 01-2119533092-50	Aquatic Acute 1; H400 Aquatic Chronic 2; H411 Skin Sens. 1B; H317	< 0,50	wt%
10	2,6-di-tert-butyl-p-cresol			
	128-37-0 204-881-4 - -	Aquatic Acute 1; H400 Aquatic Chronic 1; H410	< 0,50	wt%
11	nerol			
	106-25-2 203-378-7 - 01-2119983244-33	Skin Irrit. 2; H315 Eye Dam. 1; H318 Skin Sens. 1B; H317	< 0,50	wt%
12	2-(4-tert-butylbenzyl)propionaldehyde			
	80-54-6 201-289-8 - 01-2119485965-18	Acute Tox. 4; H302 Aquatic Chronic 2; H411 Repr. 2; H361f Skin Irrit. 2; H315 Skin Sens. 1B; H317	< 0,50	wt%

Full Text for all H-phrases and EUH-phrases: pls. see section 16

SECTION 4: First aid measures

Trade name: Duftstoff Orange**Product no.:** 166999**Current version :** 1.0.0, issued: 26.11.2020**Replaced version:** -, issued: -**Region:** MT

4.1 Description of first aid measures

General information

Remove contaminated clothing and shoes immediately, and launder thoroughly before reusing. In case of persisting adverse effects, consult a physician. In case of allergic symptoms, especially respiratory tract related, seek medical help immediately.

After inhalation

Remove affected persons from dangerous area by observing suitable respiratory protection measures. Ensure supply of fresh air. If unconscious place in recovery position and seek medical advice. Irregular breathing/no breathing: artificial respiration.

After skin contact

In case of contact with skin wash off with water. Consult a doctor if skin irritation persists.

After eye contact

Remove contact lenses. Rinse eye thoroughly under running water keeping eyelids wide open and protecting the unaffected eye (at least 10 to 15 minutes). Seek medical assistance.

After ingestion

Rinse mouth thoroughly with water. Do not induce vomiting - aspiration hazard. Never give anything by mouth to an unconscious person. Call a doctor.

4.2 Most important symptoms and effects, both acute and delayed

Effects

In the case of swallowing with subsequent vomiting, aspiration of the lungs can occur which can lead to chemical pneumonia or asphyxiation.

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water spray jet; Alcohol-resistant foam; Carbon dioxide; Dry chemical extinguisher

Unsuitable extinguishing media

High power water jet

5.2 Special hazards arising from the substance or mixture

In the event of fire, the following can be released: Carbon monoxide (CO); Carbon dioxide (CO₂); Vapours are heavier than air and may spread near ground to sources of ignition. May travel considerable distance to source of ignition and flash back.

5.3 Advice for firefighters

Use self-contained breathing apparatus. Wear protective clothing. Containers close to fire should be transferred to a safe place. Cool closed containers exposed to fire with water.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Refer to protective measures listed in sections 7 and 8. Keep away from ignition sources. Do not inhale vapours.

For emergency responders

Personal protective equipment (PPE) - see section 8.

6.2 Environmental precautions

Do not discharge into the drains/surface waters/groundwater. Do not discharge into the subsoil/soil. In case of entry into waterways, soil or drains, inform the responsible authorities.

6.3 Methods and material for containment and cleaning up

Trade name: Duftstoff Orange**Product no.:** 166999**Current version :** 1.0.0, issued: 26.11.2020**Replaced version:** -, issued: -**Region:** MT

Contain and collect spillage with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections

Information regarding safe handling, see section 7. Information regarding personal protective measures, see section 8. Information regarding waste disposal, see section 13.

SECTION 7: Handling and storage**7.1 Precautions for safe handling****Advice on safe handling**

Risks inherent to handling the product must be minimised by applying the appropriate protective and preventive measures. Working processes should - so far as possible, according to the state of the art - be designed to rule out bodily contact or the release of hazardous substances.

General protective and hygiene measures

Do not eat, drink or smoke during work time. Keep away from foodstuffs and beverages. Do not inhale vapours. Avoid contact with eyes and skin. Wash hands before breaks and after work. Remove contaminated clothing and shoes and launder thoroughly before reusing. Provide eye wash fountain in work area. Have emergency shower available.

Advice on protection against fire and explosion

Vapours can form an explosive mixture with air. Isolate from sources of heat, sparks and open flame. Take precautionary measures against electrostatic loading (earthing necessary during loading operations). Use explosion-proof equipment/fittings and non-sparking tools.

7.2 Conditions for safe storage, including any incompatibilities**Technical measures and storage conditions**

Keep container tightly closed. Store in a dry place. Protect from heat and direct sunlight.

Recommended storage temperature

Value

Room temperature

Requirements for storage rooms and vessels

Containers which are opened must be carefully closed and kept upright to prevent leakage. Always keep in containers of same material as the original.

Incompatible products

Substances to be avoided, see section 10.

7.3 Specific end use(s)

No data available.

SECTION 8: Exposure controls/personal protection**8.1 Control parameters****Occupational exposure limit values**

No	Substance name	CAS no.	EC no.
1	2-butoxyethanol	111-76-2	203-905-0
Occupational Exposure Limit Values (Schedule V, Occupational Health and Safety Authority Act)			
2-Butoxyethanol			
	WEL short-term (15 min reference period)	246	mg/m ³ 50 ml/m ³
	WEL long-term (8-hr TWA reference period)	98	mg/m ³ 20 ml/m ³
Occupational Exposure Limit Values (Schedule V, Occupational Health and Safety Authority Act)			
2-Butoxyethanol			
	WEL short-term (15 min reference period)	246	mg/m ³ 50 ppm
	WEL long-term (8-hr TWA reference period)	98	mg/m ³ 20 ppm
	Comments	Skin	
2000/39/EC			
2-Butoxyethanol			
	WEL short-term (15 min reference period)	246	mg/m ³ 50 ppm

Trade name: Duftstoff Orange

Product no.: 166999

Current version : 1.0.0, issued: 26.11.2020

Replaced version: -, issued: -

Region: MT

WEL long-term (8-hr TWA reference period)	98	mg/m ³	20	ppm
Skin resorption / sensibilisation	Skin			

DNEL, DMEL and PNEC values**DNEL values (worker)**

No	Substance name				CAS / EC no
	Route of exposure	Exposure time	Effect	Value	
1	2-butoxyethanol				111-76-2 203-905-0
	dermal	Long term (chronic)	systemic	125,00	mg/kg/day
	dermal	Short term (acut)	systemic	89,00	mg/kg/day
	inhalative	Long term (chronic)	systemic	98,00	mg/m ³
	inhalative	Short term (acut)	systemic	1091,00	mg/m ³
	inhalative	Long term (chronic)	local	246,00	mg/m ³
2	Orange, sweet, ext.				8028-48-6 232-433-8
	dermal	Long term (chronic)		8,89	mg/kg/day
	dermal	Short term (acut)		185,8	µg/cm ²
	inhalative			31,1	mg/m ³
3	benzyl alcohol				100-51-6 202-859-9
	dermal	Long term (chronic)	systemic	8	mg/kg/day
	dermal	Short term (acut)	systemic	40	mg/kg/day
	inhalative	Long term (chronic)	systemic	22	mg/m ³
	inhalative	Short term (acut)	systemic	110	mg/m ³
4	linalool				78-70-6 201-134-4
	dermal	Long term (chronic)	systemic	2,5	mg/kg/day
	dermal	Short term (acut)	systemic	5	mg/kg/day
	dermal	Long term (chronic)	local	15	mg/cm ²
	dermal	Short term (acut)	local	15	mg/cm ²
	inhalative	Long term (chronic)	systemic	2,8	mg/m ³
	inhalative	Short term (acut)	systemic	16,5	mg/m ³
5	citral				5392-40-5 226-394-6
	dermal	Long term (chronic)	systemic	1,7	mg/kg/day
	dermal	Long term (chronic)	local	140	µg/cm ²
	inhalative	Long term (chronic)	systemic	9	mg/m ³
6	alpha-hexylcinnamaldehyde				101-86-0 202-983-3
	dermal	Long term (chronic)	systemic	18,2	mg/kg/day
	dermal	Long term (chronic)	local	525	µg/cm ²
	dermal	Short term (acut)	local	525	µg/cm ²
	inhalative	Long term (chronic)	systemic	0,078	mg/m ³
	inhalative	Short term (acut)	local	6,28	mg/m ³
7	2-(4-tert-butylbenzyl)propionaldehyde				80-54-6 201-289-8
	dermal	Long term (chronic)	systemic	2,075	mg/kg/day
	dermal	Long term (chronic)	local	410	µg/cm ²
	inhalative	Long term (chronic)	systemic	0,44	mg/m ³

DNEL value (consumer)

No	Substance name				CAS / EC no
	Route of exposure	Exposure time	Effect	Value	
1	2-butoxyethanol				111-76-2 203-905-0
	oral	Long term (chronic)	systemic	6,30	mg/kg/day

Trade name: Duftstoff Orange

Product no.: 166999

Current version : 1.0.0, issued: 26.11.2020

Replaced version: -, issued: -

Region: MT

	oral	Short term (acut)	systemic	26,70	mg/kg/day
	dermal	Long term (chronic)	systemic	75,00	mg/kg/day
	dermal	Short term (acut)	systemic	89,00	mg/kg/day
	inhalative	Long term (chronic)	systemic	59,00	mg/m ³
	inhalative	Short term (acut)	systemic	426,00	mg/m ³
	inhalative	Long term (chronic)	local	147,00	mg/m ³
2	Orange, sweet, ext.			8028-48-6 232-433-8	
	oral	Long term (chronic)		4,44	mg/kg/day
	dermal	Long term (chronic)		4,44	mg/kg/day
	dermal	Short term (acut)		92,9	µg/cm ²
	inhalative	Long term (chronic)		7,78	mg/m ³
3	benzyl alcohol			100-51-6 202-859-9	
	oral	Long term (chronic)	systemic	4	mg/kg/day
	oral	Short term (acut)	systemic	20	mg/kg/day
	dermal	Long term (chronic)	systemic	4	mg/kg/day
	dermal	Long term (chronic)	systemic	20	mg/kg/day
	inhalative	Long term (chronic)	systemic	5,4	mg/m ³
	inhalative	Short term (acut)	systemic	4	mg/m ³
4	linalool			78-70-6 201-134-4	
	oral	Long term (chronic)	systemic	0,2	mg/kg/day
	oral	Short term (acut)	systemic	1,2	mg/kg/day
	dermal	Long term (chronic)	systemic	1,25	mg/kg/day
	dermal	Short term (acut)	systemic	2,5	mg/kg/day
	dermal	Long term (chronic)	local	15	mg/cm ²
	dermal	Short term (acut)	local	15	mg/cm ²
	inhalative	Long term (chronic)	systemic	0,7	mg/m ³
	inhalative	Short term (acut)	systemic	4,1	mg/m ³
5	citral			5392-40-5 226-394-6	
	oral	Long term (chronic)	systemic	0,6	mg/kg/day
	dermal	Long term (chronic)	systemic	1	mg/kg/day
	dermal	Long term (chronic)	local	140	µg/cm ²
	inhalative	Long term (chronic)	systemic	2,7	mg/m ³
6	alpha-hexylcinnamaldehyde			101-86-0 202-983-3	
	oral	Long term (chronic)	systemic	0,056	mg/kg/day
	dermal	Long term (chronic)	systemic	9,11	mg/kg/day
	dermal	Long term (chronic)	local	78,7	µg/cm ²
	inhalative	Long term (chronic)	systemic	0,019	mg/m ³
	inhalative	Short term (acut)	local	4,71	mg/m ³
7	2-(4-tert-butylbenzyl)propionaldehyde			80-54-6 201-289-8	
	oral	Long term (chronic)	systemic	0,062	mg/kg/day
	dermal	Long term (chronic)	systemic	1,038	mg/kg/day
	dermal	Long term (chronic)	local	410	µg/cm ²
	dermal	Short term (acut)	local	410	µg/cm ²
	inhalative	Long term (chronic)	systemic	0,11	mg/m ³

PNEC values

No	Substance name	Type	CAS / EC no
	ecological compartment		Value
1	2-butoxyethanol		111-76-2 203-905-0
	water	fresh water	8,80 mg/L

Trade name: Duftstoff Orange**Product no.:** 166999**Current version :** 1.0.0, issued: 26.11.2020**Replaced version:** -, issued: -**Region:** MT

	water	marine water	0,88	mg/L
	water	fresh water sediment	34,60	mg/kg
	with reference to: dry weight			
	water	marine water sediment	3,46	mg/kg
	water	Aqua intermittent	26,4	mg/L
	soil	-	2,33	mg/kg dry weight
	sewage treatment plant	-	463,00	mg/L
	secondary poisoning	-	0,02	g/kg
2	Orange, sweet, ext.		8028-48-6 232-433-8	
	water	fresh water	5,4	mg/L
	water	marine water	0,54	mg/L
	water	fresh water sediment	1,3	mg/kg dry weight
	water	marine water sediment	0,13	mg/kg dry weight
	water	Aqua intermittent	5,77	mg/L
	soil	-	0,261	mg/kg dry weight
	sewage treatment plant	-	2,1	mg/L
	secondary poisoning	-	13,3	mg/kg
	with reference to: food			
3	benzyl alcohol		100-51-6 202-859-9	
	water	fresh water	1	mg/L
	water	marine water	0,1	mg/L
	water	Aqua intermittent	2,3	mg/L
	water	fresh water sediment	5,27	mg/kg
	with reference to: dry weight			
	water	marine water sediment	0,527	mg/kg
	with reference to: dry weight			
	soil	-	0,456	mg/kg
	with reference to: dry weight			
	sewage treatment plant	-	39	mg/L
4	linalool		78-70-6 201-134-4	
	water	fresh water	0,2	mg/L
	water	marine water	0,02	mg/L
	water	Aqua intermittent	2	mg/L
	water	fresh water sediment	2,22	mg/kg dry weight
	water	marine water sediment	0,222	mg/kg dry weight
	soil	-	0,327	mg/kg dry weight
	sewage treatment plant	-	10	mg/L
	secondary poisoning	-	7,8	mg/kg food
5	citral		5392-40-5 226-394-6	
	water	fresh water	0,007	mg/L
	water	marine water	0,001	mg/L
	water	Aqua intermittent	0,068	mg/L
	water	fresh water sediment	0,125	mg/kg dry weight
	water	marine water sediment	0,013	mg/kg dry weight

Trade name: Duftstoff Orange**Product no.:** 166999**Current version :** 1.0.0, issued: 26.11.2020**Replaced version: -**, issued: -**Region:** MT

	soil	-	0,021	mg/kg dry weight
	sewage treatment plant	-	1,6	mg/L
6	alpha-hexylcinnamaldehyde		101-86-0 202-983-3	
	water	fresh water	0,001	mg/L
	water	marine water	0	mg/L
	water	fresh water sediment	3,2	mg/kg dry weight
	water	marine water sediment	0,064	mg/kg dry weight
	soil	-	0,398	mg/kg dry weight
	sewage treatment plant	-	10	mg/L
7	2-(4-tert-butylbenzyl)propionaldehyde		80-54-6 201-289-8	
	water	fresh water	0,002	mg/L
	water	marine water	0	mg/L
	water	Aqua intermittent	0,024	mg/L
	water	fresh water sediment	0,269	mg/kg dry weight
	water	marine water sediment	0,027	mg/kg dry weight
	soil	-	0,052	mg/kg dry weight
	sewage treatment plant	-	10	mg/L

8.2 Exposure controls

Appropriate engineering controls

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapour below the OEL (=Occupational Exposure Limit), suitable respiratory protection must be worn.

Personal protective equipment

Respiratory protection

If workplace exposure limits are exceeded, a respiration protection approved for this particular job must be worn. In case of aerosol and mist formation, take appropriate measures for breathing protection in the event workplace threshold values are not specified. Filter A or environment-independent breathing apparatus.

Eye / face protection

Safety glasses with side protection shield (EN 166)

Hand protection

Sufficient protection is given wearing suitable protective gloves checked according to i.e. EN 374, in the event of risk of skin contact with the product. Before use, the protective gloves should be tested in any case for its specific work-station suitability (i.e. mechanical resistance, product compatibility and antistatic properties). Adhere to the manufacturer's instructions and information relating to the use, storage, care and replacement of protective gloves. Protective gloves shall be replaced immediately when physically damaged or worn. Design operations thus to avoid permanent use of protective gloves.

Appropriate Material	butyl rubber		
Material thickness	>=	0,5	mm
Breakthrough time	>	120	min

Other

Chemical-resistant work clothes.

Environmental exposure controls

No data available.

SECTION 9: Physical and chemical properties

Trade name: Duftstoff Orange

Product no.: 166999

Current version : 1.0.0, issued: 26.11.2020

Replaced version: -, issued: -

Region: MT

9.1 Information on basic physical and chemical properties

Form/Colour			
liquid			
orange			
Odour			
fruity			
Odour threshold			
No data available			
pH value			
Not applicable			
Boiling point / boiling range			
No data available			
Melting point / melting range			
No data available			
Decomposition point / decomposition range			
No data available			
Flash point			
Value	>	55	°C
Auto-ignition temperature			
No data available			
Oxidising properties			
No data available			
Explosive properties			
This product is not explosive. In and after use danger of production of inflammable compounds.			
Flammability (solid, gas)			
No data available			
Lower flammability or explosive limits			
No data available			
Upper flammability or explosive limits			
No data available			
Vapour pressure			
Value	<	106	hPa
Reference temperature		50	°C
Vapour density			
No data available			
Evaporation rate			
No data available			
Relative density			
No data available			
Density			
Value		0,89	g/cm ³
Reference temperature		20	°C
Solubility in water			
Comments	miscible		
Solubility(ies)			

Trade name: Duftstoff Orange

Product no.: 166999

Current version : 1.0.0, issued: 26.11.2020

Replaced version: -, issued: -

Region: MT

No data available

Partition coefficient: n-octanol/water

No	Substance name	CAS no.	EC no.
1	2-butoxyethanol	111-76-2	203-905-0
log Pow		0,81	
Reference temperature		25	°C
Source		ECHA	
2	Orange, sweet, ext.	8028-48-6	232-433-8
log Pow		>= 4	
3	benzyl alcohol	100-51-6	202-859-9
log Pow		1,05	
Reference temperature		20	°C
Source		ECHA	
4	linalool	78-70-6	201-134-4
log Pow		2,84	
Reference temperature		20	°C
Method		OECD 107	
Source		ECHA	
5	citral	5392-40-5	226-394-6
log Pow		2,76	
Reference temperature		25	°C
Method		OECD 107	
Source		ECHA	
6	alpha-hexylcinnamaldehyde	101-86-0	202-983-3
log Pow		appr. 5,3	
Reference temperature		24	°C
Method		OECD 117	
Source		ECHA	
7	2,6-di-tert-butyl-p-cresol	128-37-0	204-881-4
log Pow		4,362	

Viscosity

Value	< 7	mm ² /s
Reference temperature	40	°C
Type	kinematic	

9.2 Other information**Other information**

No data available.

SECTION 10: Stability and reactivity**10.1 Reactivity**

No data available.

10.2 Chemical stability

Stable under recommended storage and handling conditions (See section 7).

10.3 Possibility of hazardous reactions

Dangerous reactions are not to be expected when handling product according to its intended use.

10.4 Conditions to avoid

Heat, naked flames and other ignition sources. Static discharges.

10.5 Incompatible materials

strong oxidizing agents; light metals

10.6 Hazardous decomposition products

No hazardous decomposition products known.

Trade name: Duftstoff Orange

Product no.: 166999

Current version : 1.0.0, issued: 26.11.2020

Replaced version: -, issued: -

Region: MT

SECTION 11: Toxicological information**11.1 Information on toxicological effects**

Acute oral toxicity (result of the ATE calculation for the mixture)	
No	Product Name
1	Duftstoff Orange
Comments	The result of the applied calculation method according to the European Regulation (EC) 1272/2008 (CLP), Paragraph 3.1.3.6, Part 3 of Annex I is outside the values that imply a classification / labelling of this mixture according to table 3.1.1 defining the respective categories (ATE oral > 2000 mg/kg).

Acute oral toxicity			
No	Substance name	CAS no.	EC no.
1	2-butoxyethanol	111-76-2	203-905-0
LD50		1746	mg/kg bodyweight
Species	rat		
Method	OECD 401		
Source	ECHA		
2	Orange, sweet, ext.	8028-48-6	232-433-8
LD50	>	5000	mg/kg bodyweight
Species	rat		
3	benzyl alcohol	100-51-6	202-859-9
LD50	=	1620	mg/kg bodyweight
Species	rat		
Source	ECHA		
4	linalool	78-70-6	201-134-4
LD50		2790	mg/kg bodyweight
Species	rat		
Method	OECD 401		
Source	ECHA		
5	citral	5392-40-5	226-394-6
LD50	appr.	6800	mg/kg bodyweight
Species	rat		
Method	BASF-Test		
Source	ECHA		

Acute dermal toxicity (result of the ATE calculation for the mixture)	
No	Product Name
1	Duftstoff Orange
Comments	The result of the applied calculation method according to the European Regulation (EC) 1272/2008 (CLP), Paragraph 3.1.3.6, Part 3 of Annex I is outside the values that imply a classification / labelling of this mixture according to table 3.1.1 defining the respective categories (ATE dermal > 2000 mg/kg).

Acute dermal toxicity			
No	Substance name	CAS no.	EC no.
1	2-butoxyethanol	111-76-2	203-905-0
LD50	>	2000	mg/kg bodyweight
Species	guinea pig		
Method	OECD 402		
Source	ECHA		
2	Orange, sweet, ext.	8028-48-6	232-433-8
LD50	>	5000	mg/kg bodyweight
Species	rabbit		
3	linalool	78-70-6	201-134-4

Trade name: Duftstoff Orange**Product no.:** 166999**Current version :** 1.0.0, issued: 26.11.2020**Replaced version:** -, issued: -**Region:** MT

LD50		5610	mg/kg bodyweight
Species	rabbit		
Method	OECD 402		
Source	ECHA		
4	citral	5392-40-5	226-394-6
LD50	>	2000	mg/kg bodyweight
Species	rabbit		
Method	BASF-Test		
Source	ECHA		

Acute inhalational toxicity (result of the ATE calculation for the mixture)

No	Product Name		
1	Duftstoff Orange		
ATE (Mixture)		2,8351	mg/l
Route of exposure / physical form	Dust/mist		
Method	Calculation method according Regulation (EC) No 1272/2008, (CLP), annex I, part 3, section 3.1.3.6.		

Acute inhalational toxicity

No	Substance name	CAS no.	EC no.
1	2-butoxyethanol	111-76-2	203-905-0
ATE		1,5	mg/l
Duration of exposure		4	h
State of aggregation	Dust/mist		
Species	rat		
2	benzyl alcohol	100-51-6	202-859-9
LC50	>	4,178	mg/l
Duration of exposure		4	h
State of aggregation	mist		
Species	rat		
Method	OECD 403		
Source	ECHA		

Skin corrosion/irritation

No	Substance name	CAS no.	EC no.
1	2-butoxyethanol	111-76-2	203-905-0
Duration of exposure		4	h
Species	rabbit		
Method	EU B.4		
Source	ECHA		
Evaluation	irritant		
2	benzyl alcohol	100-51-6	202-859-9
Species	rabbit		
Method	OECD 404		
Source	ECHA		
Evaluation	non-irritant		
3	linalool	78-70-6	201-134-4
Species	rabbit		
Method	OECD 404		
Source	ECHA		

Serious eye damage/irritation

No	Substance name	CAS no.	EC no.
1	2-butoxyethanol	111-76-2	203-905-0
Duration of exposure		24	h
Species	rabbit		
Method	OECD 405		
Source	ECHA		
Evaluation	Irritating to eyes		
2	Orange, sweet, ext.	8028-48-6	232-433-8

Trade name: Duftstoff Orange

Product no.: 166999

Current version : 1.0.0, issued: 26.11.2020

Replaced version: -, issued: -

Region: MT

Species	rabbit
Method	OECD 405
Evaluation	non-irritant
3	benzyl alcohol 100-51-6 202-859-9
Species	rabbit
Method	OECD 405
Source	ECHA
Evaluation	irritant
4	linalool 78-70-6 201-134-4
Species	rabbit
Method	OECD 405
Source	ECHA
5	citral 5392-40-5 226-394-6
Species	rabbit
Method	OECD 405
Source	ECHA
Evaluation	irritant

Respiratory or skin sensitisation

No	Substance name	CAS no.	EC no.
1	2-butoxyethanol	111-76-2	203-905-0
Route of exposure		Skin	
Species	guinea pig		
Method	OECD 406		
Source	ECHA		
Evaluation	non-sensitizing		
2	linalool	78-70-6	201-134-4
Route of exposure		Skin	
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are met.		
3	citral	5392-40-5	226-394-6
Route of exposure		Skin	
Species	guinea pig		
Method	OECD 406		
Source	ECHA		
Evaluation	non-sensitizing		
4	alpha-hexylcinnamaldehyde	101-86-0	202-983-3
Route of exposure		Skin	
Species	mouse		
Method	OECD 429		
Source	ECHA		
Evaluation	strongly sensitizing		

Germ cell mutagenicity

No	Substance name	CAS no.	EC no.
1	2-butoxyethanol	111-76-2	203-905-0
Method	OECD 471		
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		
2	linalool	78-70-6	201-134-4
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		
3	citral	5392-40-5	226-394-6
Method	OECD 471		
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		

Reproduction toxicity

No	Substance name	CAS no.	EC no.
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Trade name: Duftstoff Orange

Product no.: 166999

Current version : 1.0.0, issued: 26.11.2020

Replaced version: -, issued: -

Region: MT

1	citral	5392-40-5	226-394-6
Method	OECD 414		
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		

Carcinogenicity			
No	Substance name	CAS no.	EC no.
1	2-butoxyethanol	111-76-2	203-905-0
Species	rat		
Method	OECD 451		
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		
2	benzyl alcohol	100-51-6	202-859-9
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		
3	linalool	78-70-6	201-134-4
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		
4	citral	5392-40-5	226-394-6
Method	OECD 453		
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		

STOT - single exposure	
No data available	

STOT - repeated exposure			
No	Substance name	CAS no.	EC no.
1	linalool	78-70-6	201-134-4
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		

Aspiration hazard	
No data available	

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish (acute)			
No	Substance name	CAS no.	EC no.
1	2-butoxyethanol	111-76-2	203-905-0
LC50	>	1474	mg/l
Duration of exposure		96	h
Species	Oncorhynchus mykiss		
Method	OECD 203		
Source	ECHA		
2	Orange, sweet, ext.	8028-48-6	232-433-8
LC50		0,7	mg/l
Duration of exposure		96	h
Species	Pimephales promelas		
Method	OECD 203		
3	benzyl alcohol	100-51-6	202-859-9
LC50		460	mg/l
Duration of exposure		96	h
Species	Pimephales promelas		
Method	EPA OPP 72-1		
Source	ECHA		
4	linalool	78-70-6	201-134-4
LC50		27,8	mg/l

Trade name: Duftstoff Orange**Product no.:** 166999**Current version :** 1.0.0, issued: 26.11.2020**Replaced version:** -, issued: -**Region:** MT

Duration of exposure	96	h
Species	Oncorhynchus mykiss	
Method	OECD 203	
Source	ECHA	
5	citral	5392-40-5 226-394-6
LC50	6,78	mg/l
Duration of exposure	96	h
Species	Leuciscus idus	
Method	DIN 38412	
Source	ECHA	
6	alpha-hexylcinnamaldehyde	101-86-0 202-983-3
LC50	1,7	mg/l
Duration of exposure	96	h
Species	Pimephales promelas	
Method	OECD 203	
Source	ECHA	

Toxicity to fish (chronic)

No	Substance name	CAS no.	EC no.
1	2-butoxyethanol	111-76-2	203-905-0
NOEC	>	100	mg/l
Duration of exposure		21	day(s)
Species	Danio rerio		
Method	OECD 204		
Source	ECHA		

Toxicity to Daphnia (acute)

No	Substance name	CAS no.	EC no.
1	2-butoxyethanol	111-76-2	203-905-0
EC50		1550	mg/l
Duration of exposure		48	h
Species	Daphnia magna		
Method	OECD 202		
Source	ECHA		
2	Orange, sweet, ext.	8028-48-6	232-433-8
EC50		0,67	mg/l
Duration of exposure		48	h
Species	Daphnia magna		
Source	OECD 202		
3	benzyl alcohol	100-51-6	202-859-9
EC50		230	mg/l
Duration of exposure		48	h
Species	Daphnia magna		
Method	OECD 202		
Source	ECHA		
4	linalool	78-70-6	201-134-4
EC50		59	mg/l
Duration of exposure		48	h
Species	Daphnia magna		
Method	OECD 202		
Source	ECHA		
5	citral	5392-40-5	226-394-6
EC50		6,8	mg/l
Duration of exposure		48	h
Species	Daphnia magna		
Method	79/831/EEC		
Source	ECHA		
6	alpha-hexylcinnamaldehyde	101-86-0	202-983-3
EC50	0,36	- 0,59	mg/l

Trade name: Duftstoff Orange**Product no.:** 166999**Current version :** 1.0.0, issued: 26.11.2020**Replaced version:** -, issued: -**Region:** MT

Duration of exposure	48	h
Species	Daphnia magna	
Method	OECD 202	
Source	ECHA	

Toxicity to Daphnia (chronic)			
No	Substance name	CAS no.	EC no.
1	2-butoxyethanol	111-76-2	203-905-0
NOEC		100	mg/l
Duration of exposure		21	day(s)
Species	Daphnia magna		
Method	OECD 211		
Source	ECHA		
2	benzyl alcohol	100-51-6	202-859-9
NOEC		51	mg/l
Duration of exposure		21	day(s)
Species	Daphnia magna		
Method	OECD 211		
Source	ECHA		
3	alpha-hexylcinnamaldehyde	101-86-0	202-983-3
NOEC		63	µg/l
Duration of exposure		21	day(s)
Species	Daphnia magna		
Method	OECD 211		
Source	ECHA		

Toxicity to algae (acute)			
No	Substance name	CAS no.	EC no.
1	2-butoxyethanol	111-76-2	203-905-0
EC50		911	mg/l
Duration of exposure		72	h
Species	Pseudokirchneriella subcapitata		
Method	OECD 201		
Source	ECHA		
2	Orange, sweet, ext.	8028-48-6	232-433-8
ErC50		150	mg/l
Duration of exposure		72	h
Species	Desmodemus subspicatus		
Method	OECD 201		
Source	ECHA		
3	benzyl alcohol	100-51-6	202-859-9
EC50		500	mg/l
Duration of exposure		72	h
Species	Pseudokirchneriella subcapitata		
Method	OECD 201		
Source	ECHA		
4	linalool	78-70-6	201-134-4
ErC50		156,7	mg/l
Duration of exposure		96	h
Species	Desmodemus subspicatus		
Method	DIN 38412		
Source	ECHA		
5	citral	5392-40-5	226-394-6
EC50		103,8	mg/l
Duration of exposure		72	h
Species	Desmodemus subspicatus		
Method	DIN 38412		
Source	ECHA		
6	alpha-hexylcinnamaldehyde	101-86-0	202-983-3
EC50	>	0,065	mg/l

Trade name: Duftstoff Orange

Product no.: 166999

Current version : 1.0.0, issued: 26.11.2020

Replaced version: -, issued: -

Region: MT

Duration of exposure	72	h
Species	Desmodosmus subspicatus	
Method	OECD 201	
Source	ECHA	

Toxicity to algae (chronic)			
No	Substance name	CAS no.	EC no.
1	benzyl alcohol	100-51-6	202-859-9
NOEC		31072	mg/l
Duration of exposure		72	
Species	Pseudokirchneriella subcapitata		
Method	OECD 201		
Source	ECDIN		

Bacteria toxicity	
No data available	

12.2 Persistence and degradability

Biodegradability			
No	Substance name	CAS no.	EC no.
1	2-butoxyethanol	111-76-2	203-905-0
Type	aerobic biodegradation		
Value		90,4	%
Duration		28	day(s)
Method	OECD 301 B		
Source	ECHA		
Evaluation	readily biodegradable		
2	Orange, sweet, ext.	8028-48-6	232-433-8
Value	72	- 83,4	%
Duration		28	day(s)
Method	OECD 301 B		
Evaluation	readily biodegradable		
3	benzyl alcohol	100-51-6	202-859-9
Type	BOD of the ThOD		
Value	92	- 96	%
Duration		14	day(s)
Method	OECD 301 C		
Source	ECHA		
Evaluation	readily biodegradable		
4	linalool	78-70-6	201-134-4
Value	>	64	%
Duration		28	day(s)
Method	OECD 301 D		
Source	ECHA		
Evaluation	readily biodegradable		
5	citral	5392-40-5	226-394-6
Type	BSB		
Value	>	90	%
Duration		28	day(s)
Method	92/69/EEC, C.4-C		
Source	ECHA		
6	alpha-hexylcinnamaldehyde	101-86-0	202-983-3
Value	appr.	97	%
Duration		28	day(s)
Method	OECD 301 F		
Source	ECHA		

12.3 Bioaccumulative potential

Bioconcentration factor (BCF)	

Trade name: Duftstoff Orange

Product no.: 166999

Current version : 1.0.0, issued: 26.11.2020

Replaced version: -, issued: -

Region: MT

No	Substance name	CAS no.	EC no.
1	Orange, sweet, ext.	8028-48-6	232-433-8
BCF		32	- 156
Partition coefficient: n-octanol/water			
No	Substance name	CAS no.	EC no.
1	2-butoxyethanol	111-76-2	203-905-0
log Pow		0,81	
Reference temperature		25 °C	
Source		ECHA	
2	Orange, sweet, ext.	8028-48-6	232-433-8
log Pow		>= 4	
3	benzyl alcohol	100-51-6	202-859-9
log Pow		1,05	
Reference temperature		20 °C	
Source		ECHA	
4	linalool	78-70-6	201-134-4
log Pow		2,84	
Reference temperature		20 °C	
Method		OECD 107	
Source		ECHA	
5	citral	5392-40-5	226-394-6
log Pow		2,76	
Reference temperature		25 °C	
Method		OECD 107	
Source		ECHA	
6	alpha-hexylcinnamaldehyde	101-86-0	202-983-3
log Pow		appr. 5,3	
Reference temperature		24 °C	
Method		OECD 117	
Source		ECHA	
7	2,6-di-tert-butyl-p-cresol	128-37-0	204-881-4
log Pow		4,362	

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

Results of PBT and vPvB assessment	
PBT assessment	According to the information provided in the supply chain, the mixture does not contain > 0.1% of a substance that is considered to be PBT.
vPvB assessment	According to the information provided in the supply chain, the mixture does not contain > 0.1% of a substance that is considered to be vPvB.

12.6 Other adverse effects

No data available.

12.7 Other information

Other information
Do not let enter the product into drains or waterways and do not store on public depositories.

SECTION 13: Disposal considerations**13.1 Waste treatment methods**

Trade name: Duftstoff Orange**Product no.:** 166999**Current version :** 1.0.0, issued: 26.11.2020**Replaced version:** -, issued: -**Region:** MT**Product**

Disposal of the product should be carried out in accordance with all applicable regulations following consultation with the responsible local authority and the disposal company in an authorised and suitable disposal facility.

Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company.

Packaging

Residuals must be removed from packaging and when emptied completely disposed of in accordance with the regulations for waste removal. Incompletely emptied packaging must be disposed of in the form of disposal specified by the regional disposer.

SECTION 14: Transport information**14.1 Transport ADR/RID/ADN**

Class	3
Classification code	F1
Packing group	III
UN number	UN1266
Proper shipping name	PERFUMERY PRODUCTS
Tunnel restriction code	E
Label	3
Environmentally hazardous substance mark	Symbol "fish and tree"

14.2 Transport IMDG

Class	3
Packing group	III
UN number	UN1266
Proper shipping name	PERFUMERY PRODUCTS
Technical name	Orange, sweet, ext.
EmS	F-E, S-D
Label	3
Marine pollutant mark	Symbol "fish and tree"

14.3 Transport ICAO-TI / IATA

Class	3
Packing group	III
UN number	UN1266
Proper shipping name	Perfumery products
Label	3

14.4 Other information

No data available.

14.5 Environmental hazards

Information on environmental hazards, if relevant, please see 14.1 - 14.3.

14.6 Special precautions for user

No data available.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not relevant

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulations****Regulation (EC) No 1907/2006 (REACH) Annex XIV (List of substances subject to authorisation)**

According to the data available and/or specifications supplied by upstream suppliers, this product does not contain

Trade name: Duftstoff Orange**Product no.:** 166999**Current version :** 1.0.0, issued: 26.11.2020**Replaced version:** -, issued: -**Region:** MT

any substances considered as substances requiring authorisation as listed on Annex XIV of the REACH regulation (EC) 1907/2006.

REACH candidate list of substances of very high concern (SVHC) for authorisation

According to available data and the information provided by preliminary suppliers, the product does not contain substances that are considered substances meeting the criteria for inclusion in annex XIV (List of Substances Subject to Authorisation) as laid down in Article 57 and article 59 of REACH (EC) 1907/2006.

Regulation (EC) No 1907/2006 (REACH) Annex XVII: RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, MIXTURES AND ARTICLES

The product is considered being subject to REACH regulation (EC) 1907/2006 annex XVII.	No 3, 40
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Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances

This product is subject to Part I of Annex I, risk category:	E1, P5c
If the properties of the substance/product give rise to more than one classification, for the purposes of 2012/18/UE, the lowest qualifying quantities set out in Part 1 and Part 2 of Annex I shall apply.	

Other regulations

Adhere to the national sanitary and occupational safety regulations when using this product. Employment restrictions, according to the regulations for protection of expectant and nursing mothers and the youth health and safety regulations, serving to protect against hazardous materials, should be observed.

15.2 Chemical safety assessment

A chemical safety assessment has not been carried out for this mixture.

SECTION 16: Other information**Sources of key data used to compile the data sheet:**

Regulation (EC) No 1907/2006 (REACH), 1272/2008 (CLP) as amended in each case.

Directives 2000/39/EC, 2006/15/EC, 2009/161/EU, (EU) 2017/164.

National Threshold Limit Values of the corresponding countries as amended in each case.

Transport regulations according to ADR, RID, IMDG, IATA as amended in each case.

The data sources used to determine physical, toxic and ecotoxic data, are indicated directly in the corresponding section.

Full text of the H- and EUH- phrases drawn up in sections 2 and 3 (provided not already drawn up in these sections)

H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H318	Causes serious eye damage.
H361f	Suspected of damaging fertility.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

Creation of the safety data sheet

UMCO GmbH - D-21107 Hamburg, Georg-Wilhelm-Strasse 187, Tel.: +49(40)555 546 300, Fax: +49(40)555 546 357, e-mail: umco@umco.de

This information is based on our present knowledge and experience.

The safety data sheet describes products with a view to safety requirements.

It does not however, constitute a guarantee for any specific product properties and shall not establish a legally valid contractual relationship.

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