Safety Data Sheet

17 Mix sunscreen solutions

Version：V2.0.0.1
Report No.：BWQ9720-2016-MSDS-EP
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Revision Date：-

*Prepared in accordance with EU REACH Regulation (REACH 1907/2006 with amendment 2020/878)

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

1.1 Product identifier

Product Name	17 Mix sunscreen solutions
Cat No.	BWQ9720-2016
CAS No.	Not applicable
EC No.	Not applicable
Molecular Formula	Not applicable
REACH Registration Number	-
UFI	No information available

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

Relevant identified uses	Please consult manufacturer.
Uses advised against	Please consult manufacturer.

1.3 Details of the supplier of the Safety Data Sheet

Name of the company	Weiyel Inc
Address of the company	Hedian Light Industrial Park, Chengguan Town, Shangcheng County, Xinyang City, Henan Province, China
Post code	465350
Telephone number	010-58103678
Fax number	010-84840368
E-mail address	info@weiyel.com

1.4 Emergency telephone number

Emergency telephone number	010-58103678
Opening hours	24h

2 Hazards identification

2.1 CLP classification according to Regulation (EC) No. 1272/2008 with amendment 2023/707

Flammable liquids	Category 2
Acute Toxicity - Oral	Category 4
Acute Toxicity - Dermal	Category 4
Serious eye damage/irritation	Category 2
Acute Toxicity - Inhalation	Category 4
Specific target organ toxicity -	Category 3

single exposure; respiratory tract irritation	
Carcinogenicity	Category 2
Specific target organ toxicity - single exposure	Category 1
Hazardous to the aquatic environment - long-term (chronic) hazard	Category 3

2.2 Label elements

Hazard pictograms	
Signal word	Danger

Hazard statements

H225	Highly flammable liquid and vapour
H302	Harmful if swallowed
H312	Harmful in contact with skin
H319	Causes serious eye irritation
H332	Harmful if inhaled
H335	May cause respiratory irritation
H351	Suspected of causing cancer
H370	Causes damage to organs
H412	Harmful to aquatic life with long lasting effects
EUH019	May form explosive peroxides

Precautionary statements

- Prevention

P201	Obtain special instructionsbefore use.
P202	Do not handle until allsafety precautions havebeen read and understood.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof [electrical/ventilating/lighting] equipment.
P242	Use non-sparking tools.
P243	Take action to prevent static discharges.
P260	Do not breathe gas/mist/vapour/spray.
P264	Wash hands and other parts of the body (if related) thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

- Response

P312	Call a POISON CENTRE/ doctor/… if you feel unwell.
P321	Specific treatment (see related instructions on the label).
P330	Rinse mouth.
P301+P312	IF SWALLOWED: Call a POISON CENTRE/doctor if you feel unwell.
P302+P352	IF ON SKIN: Wash with plenty of water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P370+P378	Small fire: dry chemical, CO_2 or alcohol-resistant foam; Large fire: alcohol-resistant foam; Fire involving tanks, rail tank cars or highway tanks: Fight fire from maximum distance or use unmanned master stream devices or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

◆ Storage

P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.

◆ Disposal

P501	Dispose of contents/container in accordance with local/regional/national/ international regulations.

2.3 Other hazards

◆ Results of PBT and vPvB assessment

Component	Results of PBT and vPvB assessment [according to (EC) No 1907/2006]
1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one	Insufficient information, temporarily unable to evaluate
(±)-1,7,7-trimethyl-3-[(4-methylphenyl)methylene]bicyclo[2.2.1]heptan-2-one	Not PBT/vPvB
Oxybenzone	Not PBT/vPvB
Sulisobenzone	Not PBT/vPvB
Benzenesulfonic acid, 4-[(4,7,7-trimethyl-3-oxobicyclo[2.2.1]hept-2-ylidene)methyl]-	Insufficient information, temporarily unable to evaluate
1-[4-(1,1-dimethylethyl)phenyl]-3-(4-methoxyphenyl)propane-1,3-dione	Not PBT/vPvB
Methyl N,N,N-trimethyl-4-[(4,7,7-trimethyl-3-oxobicyclo[2.2.1]hept-2-ylidene)methyl]ani	Insufficient information, temporarily unable to evaluate

linium sulphate	
Benzoic acid,2-[4-(diethylamino)-2-hydroxybenzoyl]-, hexyl ester	Not PBT/vPvB
Benzoic acid,4,4'-[[6-[[4-[[(1,1-dimethylethyl)amino]carbonyl]phenyl]amino]-1,3,5-triazine-2,4-diyl]diimino]bis-,1,1'-bis(2-ethylhexyl) ester	Not PBT/vPvB
2-ethylhexyl 4-(dimethylamino)benzoate	Not PBT/vPvB
2-ethylhexyl 4-methoxycinnamate	Insufficient information, temporarily unable to evaluate
2-ethylhexyl salicylate	Not PBT/vPvB
Homosalate	Not PBT/vPvB
Isopentyl p-methoxycinnamate	Not PBT/vPvB
Octocrilene	Not PBT/vPvB
2-phenyl-1H-benzimidazole-5-sulphonic acid	Not PBT/vPvB
TEREPHTHALYLIDENE DICAMPHOR SULFONIC ACID	Insufficient information, temporarily unable to evaluate
Methanol	Not PBT/vPvB
Tetrahydrofuran	Not PBT/vPvB
Water	Insufficient information, temporarily unable to evaluate
Perchloric acid	Not applicable

◆ Results of endocrine disrupting properties assessment

Component	Results of endocrine disrupting properties assessment [according to (EU) No 2017/2100 or (EU) No 2018/605]
1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one	ED
(±)-1,7,7-trimethyl-3-[(4-methylphenyl)methylene]bicyclo[2.2.1]heptan-2-one	Insufficient information, temporarily unable to evaluate
Oxybenzone	Insufficient information, temporarily unable to evaluate
Sulisobenzone	Insufficient information, temporarily unable to evaluate
Benzenesulfonic acid, 4-[(4,7,7-trimethyl-3-oxobicyclo[2.2.1]hept-2-ylidene)methyl]-	Insufficient information, temporarily unable to evaluate
1-[4-(1,1-dimethylethyl)phenyl]-3-(4-methoxyphenyl)	Insufficient information, temporarily unable to evaluate

propane-1,3-dione	
Methyl N,N,N-trimethyl-4-[(4,7,7-trimethyl-3-oxobicyclo[2.2.1]hept-2-ylidene)methyl]anilinium sulphate	Insufficient information, temporarily unable to evaluate
Benzoic acid,2-[4-(diethylamino)-2-hydroxybenzoyl]-, hexyl ester	Insufficient information, temporarily unable to evaluate
Benzoic acid,4,4'-[[6-[[4-[[(1,1-dimethylethyl)amino]carbonyl]phenyl]amino]-1,3,5-triazine-2,4-diyl]diimino]bis-,1,1'-bis(2-ethylhexyl) ester	Insufficient information, temporarily unable to evaluate
2-ethylhexyl 4-(dimethylamino)benzoate	Insufficient information, temporarily unable to evaluate
2-ethylhexyl 4-methoxycinnamate	Insufficient information, temporarily unable to evaluate
2-ethylhexyl salicylate	Insufficient information, temporarily unable to evaluate
Homosalate	Insufficient information, temporarily unable to evaluate
Isopentyl p-methoxycinnamate	Insufficient information, temporarily unable to evaluate
Octocrilene	Insufficient information, temporarily unable to evaluate
2-phenyl-1H-benzimidazole-5-sulphonic acid	Insufficient information, temporarily unable to evaluate
TEREPHTHALYLIDENE DICAMPHOR SULFONIC ACID	Insufficient information, temporarily unable to evaluate
Methanol	Insufficient information, temporarily unable to evaluate
Tetrahydrofuran	Insufficient information, temporarily unable to evaluate
Water	Insufficient information, temporarily unable to evaluate
Perchloric acid	Insufficient information, temporarily unable to evaluate

◆ Other

	Not applicable.

3 Composition/information on ingredients

3.1 Substance/mixture

	Mixture

Component	Weight % content(or range)	Classification according to Regulation (EC) No. 1272/2008 with amendment 2023/707 [CLP]	Specific Conc. Limits, M-factors
1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one	0.0328	Reproductive toxicity, Category 2, H361	-

CAS：15087-24-8 EC：239-139-9 Index No.：-			
(±)-1,7,7-trimethyl-3-[(4-methylphenyl)methylene]bicyclo[2.2.1]heptan-2-one CAS：36861-47-9 EC：253-242-6 Index No.：-	0.0546	Hazardous to the aquatic environment - short-term (acute) hazard, Category 1, H400; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 1, H410	-
Oxybenzone CAS：131-57-7 EC：205-031-5 Index No.：-	0.1093	Skin Corrosion/Irritation, Category 2, H315; Serious eye damage/irritation, Category 2, H319; Specific target organ toxicity - single exposure; respiratory tract irritation, Category 3, H335	-
Sulisobenzone CAS：4065-45-6 EC：223-772-2 Index No.：-	0.0655	Skin Corrosion/Irritation, Category 2, H315; Sensitization - skin, Category 1, H317; Serious eye damage/irritation, Category 2, H319	-
Benzenesulfonic acid, 4-[(4,7,7-trimethyl-3-oxobicyclo[2.2.1]hept-2-ylidene)methyl]- CAS：56039-58-8 EC：- Index No.：-	0.0765	Skin Corrosion/Irritation, Category 2, H315; Serious eye damage/irritation, Category 2, H319; Specific target organ toxicity - single exposure; respiratory tract irritation, Category 3, H335	-
1-[4-(1,1-dimethylethyl)phenyl]-3-(4-methoxyphenyl)propane-1,3-dione CAS：70356-09-1 EC：274-581-6 Index No.：-	0.0655	Hazardous to the aquatic environment - long-term (chronic) hazard, Category 4, H413	-
Methyl N,N,N-trimethyl-4-[(4,7,7-trimethyl-3-oxobicyclo[2.2.1]hept-2-ylidene)methyl]anilinium sulphate CAS：52793-97-2 EC：258-190-8 Index No.：-	0.0765	Skin Corrosion/Irritation, Category 2, H315; Serious eye damage/irritation, Category 2, H319	-
Benzoic acid,2-[4-(diethylamino)-2-hydroxybenzoyl]-, hexyl ester CAS：302776-68-7 EC：443-860-6 Index No.：-	0.1093	Not Classified	-
Benzoic acid,4,4'-[[6-[[4-[[(1,1-dimethylethyl)amino]carbonyl]phenyl]amino]-1,3,5-triazine-2,4-diyl]diimino]bis-,1,1'-bis(2-ethylhexyl) ester CAS：154702-15-5 EC：421-450-8 Index No.：-	0.1093	Hazardous to the aquatic environment - long-term (chronic) hazard, Category 4, H413	-
2-ethylhexyl 4-(dimethylamino)benzoate CAS：21245-02-3 EC：244-289-3	0.1093	Reproductive toxicity, Category 1B, H360	-

Index No. : -			
2-ethylhexyl 4-methoxycinnamate CAS : 5466-77-3 EC : 226-775-7 Index No. : -	0.1093	Hazardous to the aquatic environment - long-term (chronic) hazard, Category 2, H411	-
2-ethylhexyl salicylate CAS : 118-60-5 EC : 204-263-4 Index No. : -	0.0655	Reproductive toxicity, Category 2, H361; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 1, H410	-
Homosalate CAS : 118-56-9 EC : 204-260-8 Index No. : -	0.1093	Reproductive toxicity, Category 2, H361; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 1, H410	-
Isopentyl p-methoxycinnamate CAS : 71617-10-2 EC : 275-702-5 Index No. : -	0.1093	Hazardous to the aquatic environment - short-term (acute) hazard, Category 1, H400; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 1, H410	-
Octocrilene CAS : 6197-30-4 EC : 228-250-8 Index No. : -	0.1093	Hazardous to the aquatic environment - long-term (chronic) hazard, Category 4, H413	-
2-phenyl-1H-benzimidazole-5-sulphonic acid CAS : 27503-81-7 EC : 248-502-0 Index No. : -	0.1093	Not Classified	-
TEREPHTHALYLIDENE DICAMPHOR SULFONIC ACID CAS : 90457-82-2 EC : - Index No. : -	0.0546	No information available	-
Methanol CAS : 67-56-1 EC : 200-659-6 Index No. : 603-001-00-X	21.31	Flammable liquids, Category 2, H225; Acute Toxicity - Oral, Category 3, H301; Acute Toxicity - Dermal, Category 3, H311; Acute Toxicity - Inhalation, Category 3, H331; Specific target organ toxicity - single exposure, Category 1, H370	H370:C ≥ 10%|H371:3% ≤ C < 10%
Tetrahydrofuran CAS : 109-99-9 EC : 203-726-8 Index No. : 603-025-00-0	48.4315	Flammable liquids, Category 2, H225; Serious eye damage/irritation, Category 2, H319; Specific target organ toxicity - single exposure; respiratory tract irritation, Category 3, H335; Carcinogenicity, Category 2, H351; May form explosive peroxides, EUH019	H335: C ≥ 25%|H319: C ≥ 25%
Water CAS : 7732-18-5 EC : 231-791-2 Index No. : -	28.7360	Not Classified	-
Perchloric acid CAS : 7601-90-3 EC : 231-512-4 Index No. : 017-006-00-4	0.0473	Oxidizing liquids, Category 1, H271; Skin corrosion/irritation, Category 1A, H314	H314A:C ≥ 50%|H314B:10% ≤ C < 50%|H315:1% ≤ C < 10%|H319:1% ≤ C < 10%|H271Y:C > 50%|H272Y2:C ≤ 50%

4 First-aid measures

4.1 Description of first aid measures

General advice	Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.
Skin contact	Take off contaminated clothing and shoes immediately. Wash off with plenty of soap and water for at least 15 minutes and consult a physician if feel uncomfortable.
Ingestion	Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.
Inhalation	Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.
Protecting of first-aiders	Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

4.2 Most important symptoms/effects, acute and delayed

1	Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

4.3 Indication of any immediate medical attention and special treatment needed

1	Treat symptomatically.
2	Symptoms may be delayed.

5 Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media	Small fire: dry chemical, CO_2 or alcohol-resistant foam; Large fire: alcohol-resistant foam; Fire involving tanks, rail tank cars or highway tanks: Fight fire from maximum distance or use unmanned master stream devices or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out.
Unsuitable extinguishing media	Use of water spray when fighting fire may be inefficient.

5.2 Specific hazards arising from the substance or mixture

1	Will form explosive mixtures with air.
2	Fire exposed containers may vent contents through pressure relief valves thereby increasing fire intensity and/ or vapour concentration.
3	Vapours may travel to source of ignition and flash back.
4	Liquid and vapour are flammable.
5	Development of hazardous combustion gases or vapor possible in the event of fire.
6	May expansion or decompose explosively when heated or involved in fire.

5.3 Advice for firefighters

1	As in any fire, wear self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear.
2	Fight fire from a safe distance, with adequate cover.
3	Prevent fire extinguishing water from contaminating surface water or the ground water system.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

1	Avoid breathing vapours and contacting with skin and eye.
2	Beware of vapours accumulating to form explosive concentrations.
3	Vapours can accumulate in low areas.
4	Emergency personnel wear positive pressure self-contained breathing apparatus. Wear protective and anti-static clothing. Wear chemical impermeable gloves.
5	Use personal protective equipment,do not breathe gas/mist/vapour/spray.
6	Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.
7	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

6.2 Environmental precautions

1	Prevent further leakage or spillage if safe to do so.
2	Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

1	It is recommended that emergency personnel wear positive pressure self-contained breathing apparatus and wear anti-static clothing.
2	In case of small amount of spillage, use clean non sparking tools to collect absorption materials.
3	In case of large amount of spillage, construct cofferdam or dig a hole to collect the spillage. Use foam cover to reduce evaporation. Water spray mist can reduce evaporation, but can not reduce the flammability of the leakage in the restricted space.
4	Collect absorbent material using a clean, non-sparking tool.
5	Cover with anti-solvent foam to reduce evaporation.
6	Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain.
7	Water spray reduces evaporation but does not reduce the flammability of spills in confined spaces.
8	Cut off the source of the leak as much as possible.
9	Keep leaks in a ventilated place.
10	Absorb spilled material in dry sand or inert absorbent. In case of large amount of spillage, contain a spill by bunding.
11	Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.
12	Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container.
13	Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

6.4 Reference to other sections

1	Personal Protective Equipment advice is contained in Section 8 of the SDS.
2	Disposal considerations advice is contained in Section 13 of the SDS.

7 Handling and storage

7.1 Precautions for safe handling

◆ Protective measures

1	Handling is performed in a well ventilated place.
2	Wear suitable protective equipment.
3	Avoid contact with skin and eyes.

◆ Measures to prevent fire

1	Use only non-sparking tools.

2	To prevent fire caused by electrostatic discharge steam, equipment on all metal parts should be grounded.
3	Use explosion proof equipment.
4	Keep away from heat/sparks/open flames/ hot surfaces.

◆ Measures to prevent aerosol and dust generation

1	Not applicable.

◆ Advice on general occupational hygiene

1	Wash hands and face after using the substances.
2	Replace the contaminated clothing immediately.

7.2 Conditions for safe storage, including any incompatibilities

1	Keep containers tightly closed.
2	Keep containers in a dry, cool and well-ventilated place.
3	Keep away from heat/sparks/open flames/hot surfaces.
4	Store away from incompatible materials and foodstuff containers.

7.3 Specific end use(s)

1	In addition to use mentioned in the Section 1.2, unforeseen other specific end uses.

8 Exposure controls/personal protection

8.1 Control parameters

◆Occupational exposure limit values

Component	Country/Region	Limit value - Eight hours		Limit value - Short term	
		ppm	mg/m³	ppm	mg/m³
Methanol	Japan - JSOH(2024–2025)	200	260	-	-
	Permissible exposure standards for workers in the workplace	200	262	250	327.5
	European Union	200	260	-	-
	France	200	260	-	-
	Germany (AGS)	100	130	200	260
	Germany (DFG)	100	130	200	260
Tetrahydrofuran	Japan - JSOH(2024–2025)	50	148	-	-
	Permissible exposure standards for workers in the workplace	200	590	250	737.5
	European Union	50	150	100	300
	France	50	150	100	300
	Germany (AGS)	50	150	100	300

	Germany (DFG)	50	150	100	300
Perchloric acid	Poland	-	1	-	3

◆ Biological limit values

Component	Standard	Biological monitoring index	Biological limits value	Sampling time	Remark
Methanol	USA -ACGIH	Methanol(Urine)	15mg/L	End of shift	
Tetrahydrofuran	USA -ACGIH	Tetrahydrofuran(Urine)	2mg/L	End of shift	

◆ Monitoring methods

1	EN 14042 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
2	GBZ/T 300 and GBZ/T 160 series standard Determination of toxic substances in workplace air.

◆ Derived No effect level (DNEL)

Component	Route of exposure	DNEL for Workers			
		Acute effects (local)	Acute effects (systemic)	Chronic effects (local)	Chronic effects (systemic)
1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
(±)-1,7,7-trimethyl-3-[(4-methylphenyl)methylene]bicyclo[2.2.1]heptan-2-one	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Oxybenzone	Inhalation	No data available	No data available	No data available	27.7 mg/m3
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Sulisobenzone	Inhalation	No data available	No data available	No data available	10 mg/m3
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Benzenesulfonic acid, 4-[(4,7,7-trimethyl-3-oxobicyclo[2.2.1]hept-2-ylidene)methyl]-	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
1-[4-(1,1-dimethylethyl)phenyl]-3-(4-methoxyphenyl)propane-1,3-dione	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Methyl N,N,N-trimethyl-4-[(4,7,7-trimethyl-3-oxobicyclo[2.2.1]hept-2-ylidene)methyl]anilinium sulphate	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available

Benzoic acid,2-[4-(diethylamino)-2-hydroxybenzoyl]-, hexyl ester	Inhalation	No data available	No data available	No data available	10 mg/m3
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Benzoic acid,4,4'-[[6-[[4-[[(1,1-dimethylethyl)amino]carbonyl]phenyl]amino]-1,3,5-triazine-2,4-diyl]diimino]bis-,1,1'-bis(2-ethylhexyl) ester	Inhalation	No data available	No data available	7.347 mg/m3	7.347 mg/m3
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
2-ethylhexyl 4-(dimethylamino) benzoate	Inhalation	No data available	No data available	No data available	3.3 mg/m3
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
2-ethylhexyl 4-methoxycinnamate	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
2-ethylhexyl salicylate	Inhalation	No data available	No data available	No data available	9.03 mg/m3
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Homosalate	Inhalation	No data available	No data available	No data available	16.09 mg/m3
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Isopentyl p-methoxycinnamate	Inhalation	No data available	No data available	No data available	7.05 mg/m3
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Octocrilene	Inhalation	No data available	No data available	No data available	5.4 mg/m3
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
2-phenyl-1H-benzimidazole-5-sulphonic acid	Inhalation	No data available	No data available	No data available	7 mg/m3
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
TEREPHTHALYLIDENE DICAMPHOR SULFONIC ACID	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Methanol	Inhalation	No data available	No data available	130 mg/m3	130 mg/m3
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Tetrahydrofuran	Inhalation	No data available	No data available	150 mg/m3	72.4 mg/m3
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available

Water	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Perchloric acid	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available

◆ Predicted No Effect Concentration (PNEC)

Component	A	B	C	D	E	F	G	H
Oxybenzone	670 ng/L	67 ng/L	10 mg/L	66 µg/kg sediment dw	6.6 µg/kg sediment dw	No hazard identified	13 µg/kg soil dw	No potential for bioaccumulation
Sulisobenzone	50 - 97.9 µg/L	5 - 9.79 µg/L	1.003 - 140 mg/L	291 - 449 µg/kg sediment dw	29.1 - 44.9 µg/kg sediment dw	No hazard identified	32.2 - 73.4 µg/kg soil dw	No potential for bioaccumulation
1-[4-(1,1-dimethylethyl)phenyl]-3-(4-methoxyphenyl)propane-1,3-dione	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No potential to cause toxic effects if accumulated (in higher organisms) via the food chain
Benzoic acid,2-[4-(diethylamino)-2-hydroxybenzoyl]-, hexyl ester	No hazard identified	No hazard identified	No hazard identified	536 µg/kg sediment dw	53.6 µg/kg sediment dw	No hazard identified	10 mg/kg soil dw	No potential for bioaccumulation
Benzoic acid,4,4'-[[6-[[4-[[(1,1-dimethylethyl)amino]carbonyl]phenyl]amino]-1,3,5-triazine-2,4-diyl]diimino]bis-,1,1'-bis(2-ethylhexyl) ester	1.88 µg/L	188 ng/L	10 - 100 mg/L	17.5 - 80.3 mg/kg sediment dw	1.75 - 8.03 mg/kg sediment dw	No hazard identified	14.2 - 16.1 mg/kg soil dw	16.7 mg/kg food
2-ethylhexyl 4-(dimethylamino) benzoate	15 ng/L	1.5 ng/L	100 mg/L	42.1 µg/kg sediment dw	4.21 µg/kg sediment dw	No hazard identified	8.4 µg/kg soil dw	3.33 mg/kg food
2-ethylhexyl salicylate	168 ng/L	16.8 ng/L	No hazard identified	218 µg/kg sediment dw	21.8 µg/kg sediment dw	No hazard identified	4.34 µg/kg soil dw	No potential for bioaccumulation
Homosalate	No hazard identified	No hazard identified	4 mg/L	272.56 mg/kg sediment dw	27.256 mg/kg sediment dw	No hazard identified	54.11 mg/kg soil dw	No potential for bioaccum

								ulation
Isopentyl p-methoxycinnamate	200 ng/L	20 ng/L	100 mg/L	90.6 µg/kg sediment dw	9.06 µg/kg sediment dw	No hazard identified	18 µg/kg soil dw	No potential to cause toxic effects if accumulated (in higher organisms) via the food chain
Octocrilene	266 ng/L	26.6 ng/L	10 mg/L	1.302 mg/kg sediment dw	130.2 µg/kg sediment dw	No hazard identified	1.25 mg/kg soil dw	No potential to cause toxic effects if accumulated (in higher organisms) via the food chain
2-phenyl-1H-benzimidazole-5-sulphonic acid	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No data available	No potential for bioaccumulation
Methanol	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No potential for bioaccumulation
Tetrahydrofuran	4.32 mg/L	432 µg/L	4.6 mg/L	23.3 mg/kg sediment dw	2.33 mg/kg sediment dw	No hazard identified	2.13 mg/kg soil dw	67 mg/kg food
Perchloric acid	21.5 µg/L	2.15 µg/L	8.2 mg/L	4.67 mg/kg sediment dw	467 µg/kg sediment dw	No hazard identified	21 µg/kg soil dw	No potential for bioaccumulation

Note 1:

A: Freshwater; B: Seawater; C: Sewage treatment plant; D: Sediment (freshwater); E: Sediment (seawater); F: Air; G: Soil; H: Secondary poisoning(Hazard for Predators).

Note 2:

The PNEC values of the remaining components not shown in the product are not available yet.

8.2 Exposure controls

8.2.1 Engineering controls

1	Ensure adequate ventilation, especially in confined areas.
2	Ensure that eyewash stations and safety showers are close to the workstation location.
3	Use explosion-proof electrical/ventilating/lighting/equipment.
4	Set up emergency exit and necessary risk-elimination area.

8.2.2 Personal protection equipment

General requirement	
Eye protection	Must wear appropriate safety goggles.
Hand protection	Must wear anti static chemical protective gloves.
Respiratory protection	Must wear appropriate personal respiratory protective equipment.
Skin and body protection	Must wear anti static chemical protective clothing and anti static shoes.

8.2.3 Environmental exposure controls

Environmental exposure controls	No information available

9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	colorless liquid
Colour	colorless liquid
Odor	No information available
Odor threshold	No information available
pH	7~8 (20°C , 200g/L,Tetrahydrofuran)
Melting point/freezing point(°C)	-108.5 (Tetrahydrofuran)
Initial boiling point and boiling range(°C)	66 (Tetrahydrofuran)
Flash point(Closed cup,°C)	-14.5 (Tetrahydrofuran)
Evaporation rate	No information available
Flammability	No information available
Upper/lower explosive limits[%(v/v)]	Upper limit：11.8 (Tetrahydrofuran)；Lower limit：2 (Tetrahydrofuran)
Vapor pressure	19.3kPa (20°C ,Tetrahydrofuran)
Vapor density(Air = 1)	2.5 (Tetrahydrofuran)
Relative density(Water=1)	0.89 (Tetrahydrofuran)
Solubility	100000mg/L (20 °C,Tetrahydrofuran)
n-octanol/water partition coefficient	0.46 (estimated,Tetrahydrofuran)
Auto-ignition temperature(°C)	321 (Tetrahydrofuran)
Decomposition temperature(°C)	No information available
Kinematic viscosity	0.5 mPa.s (20°C,Tetrahydrofuran)
Explosive properties	No information available
Oxidizing properties	No information available
Particle characteristics	Not applicable

9.2 Other information

9.2.1 Information with regard to physical hazard classes

Information with regard to physical hazard classes	No information available

9.2.2 Other safety characteristics

Other safety characteristics	No information available

10 Stability and reactivity

Stability and reactivity

10.1 Reactivity	Contact with incompatible substances can cause decomposition or other chemical reactions.
10.2 Chemical stability	Stable under proper operation and storage conditions.
10.3 Possibility of hazardous reactions	In contact with oxidants causes severe reactions, and may cause a fire or explosion. May react with strong acids, strong alkalis, strong oxidants or strong reducing agents. In contact with active metals (alkali metals, Na, Ca etc.) causes a reaction and release hydrogen. In contact with non-metallic elementals or organics causes a fire or explosion.
10.4 Conditions to avoid	Incompatible materials, heat, flame and spark.
10.5 Incompatible materials	Oxidants, alkali metals, alkaline earth metals and aluminum. Strong acids, strong alkalis, strong oxidants and strong reducing agents. Alkali, sodium, calcium, and other active metal, halogen, metal oxide, nonmetal oxide, acyl halide and metal phosphide. Non-metallic elementals, organics and fiber material.
10.6 Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11 Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008 with amendment 2023/707

17 Mix sunscreen solutions	
Skin corrosion/irritation	Based on available data, the classification criteria are not met
Serious eye damage/irritation	Causes serious eye irritation(Category 2)
Skin sensitization	Based on available data, the classification criteria are not met
Respiratory sensitization	Based on available data, the classification criteria are not met
Reproductive toxicity	Based on available data, the classification criteria are not met
STOT-single exposure	May cause respiratory irritation(Category 3); Causes damage to organs(Category 1)
STOT-repeated exposure	Based on available data, the classification criteria are not met
Aspiration hazard	Based on available data, the classification criteria are not met
Germ cell mutagenicity	Based on available data, the classification criteria are not met

Acute toxicity

Component	LD_{50}(oral)	LD_{50}(dermal)	LC_{50}(inhalation,4h)
Octocrilene	> 5000mg/kg(Rat)	No information available	No information available
Tetrahydrofuran	1650mg/kg(Rat)	No information available	No information available
Sulisobenzone	3530mg/kg(Rat)	No information available	No information available
Methanol	5628mg/kg(Rat)	15800mg/kg(Rabbit)	83.867mg/L(Rat)
Perchloric acid	1100mg/kg(Rat)	No information available	No information available
Oxybenzone	7400mg/kg(Rat)	No information available	No information available

Carcinogenicity

Component	List of carcinogens by the IARC Monographs	Report on Carcinogens by NTP
1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one	Not Listed	Not Listed
(±)-1,7,7-trimethyl-3-[(4-methylphenyl)methylene]bicyclo[2.2.1]heptan-2-one	Not Listed	Not Listed
Oxybenzone	Not Listed	Not Listed
Sulisobenzone	Not Listed	Not Listed
Benzenesulfonic acid, 4-[(4,7,7-trimethyl-3-oxobicyclo[2.2.1]hept-2-ylidene)methyl]-	Not Listed	Not Listed
1-[4-(1,1-dimethylethyl)phenyl]-3-(4-methoxyphenyl)propane-1,3-dione	Not Listed	Not Listed
Methyl N,N,N-trimethyl-4-[(4,7,7-trimethyl-3-oxobicyclo[2.2.1]hept-2-ylidene)methyl]anilinium sulphate	Not Listed	Not Listed
Benzoic acid,2-[4-(diethylamino)-2-hydroxybenzoyl]-, hexyl ester	Not Listed	Not Listed
Benzoic acid,4,4'-[[6-[[4-[[(1,1-dimethylethyl)amino]carbonyl]phenyl]amino]-1,3,5-triazine-2,4-diyl]diimino]bis-,1,1'-bis(2-ethylhexyl) ester	Not Listed	Not Listed
2-ethylhexyl 4-(dimethylamino)benzoate	Not Listed	Not Listed
2-ethylhexyl 4-methoxycinnamate	Not Listed	Not Listed
2-ethylhexyl salicylate	Not Listed	Not Listed
Homosalate	Not Listed	Not Listed
Isopentyl p-methoxycinnamate	Not Listed	Not Listed
Octocrilene	Not Listed	Not Listed
2-phenyl-1H-benzimidazole-5-sulphonic acid	Not Listed	Not Listed
TEREPHTHALYLIDENE DICAMPHOR SULFONIC ACID	Not Listed	Not Listed
Methanol	Not Listed	Not Listed

Tetrahydrofuran	Category 2B	Not Listed
Water	Not Listed	Not Listed
Perchloric acid	Not Listed	Not Listed

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

Component	Endocrine disrupting properties
1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one	The substance is a ED, however, potential concerns for the health have not been fully evaluated.
(±)-1,7,7-trimethyl-3-[(4-methylphenyl)methylene]bicyclo[2.2.1]heptan-2-one	No information available
Oxybenzone	No information available
Sulisobenzone	No information available
Benzenesulfonic acid, 4-[(4,7,7-trimethyl-3-oxobicyclo[2.2.1]hept-2-ylidene)methyl]-	No information available
1-[4-(1,1-dimethylethyl)phenyl]-3-(4-methoxyphenyl)propane-1,3-dione	No information available
Methyl N,N,N-trimethyl-4-[(4,7,7-trimethyl-3-oxobicyclo[2.2.1]hept-2-ylidene)methyl]anilinium sulphate	No information available
Benzoic acid,2-[4-(diethylamino)-2-hydroxybenzoyl]-, hexyl ester	No information available
Benzoic acid,4,4'-[[6-[[4-[[(1,1-dimethylethyl)amino]carbonyl]phenyl]amino]-1,3,5-triazine-2,4-diyl]diimino]bis-,1,1'-bis(2-ethylhexyl) ester	No information available
2-ethylhexyl 4-(dimethylamino)benzoate	No information available
2-ethylhexyl 4-methoxycinnamate	No information available
2-ethylhexyl salicylate	No information available
Homosalate	No information available
Isopentyl p-methoxycinnamate	No information available
Octocrilene	No information available
2-phenyl-1H-benzimidazol	No information available

e-5-sulphonic acid	
TEREPHTHALYLIDENE DICAMPHOR SULFONIC ACID	No information available
Methanol	No information available
Tetrahydrofuran	No information available
Water	No information available
Perchloric acid	No information available

11.2.2 Other Information

Other Information	See Section 11.1

12 Ecological information

12.1 Toxicity

Acute aquatic toxicity

Component	Fish	Crustaceans	Algae or other aquatic plants
Tetrahydrofuran	LC_{50} : 2160mg/L (96h)(Fish)	No information available	No information available
Isopentyl p-methoxycinnamate	LC_{50} : 1216mg/L (96h)(Fish)	EC_{50} : 5.6mg/L (48h)(Crustaceans)	ErC_{50} : 0.2mg/L (72h)(Algae)
(±)-1,7,7-trimethyl-3-[(4-methylphenyl)methylene]bicyclo[2.2.1]heptan-2-one	LC_{50} : > 0.74mg/L (96h)(Fish)	EC_{50} : 0.56mg/L (48h)(Crustaceans)	No information available
2-phenyl-1H-benzimidazole-5-sulphonic acid	No information available	No information available	ErC_{50} : > 100mg/L (72h)(Algae)
Benzoic acid,4,4'-[[6-[[4-[[(1,1-dimethylethyl)amino]carbonyl]phenyl]amino]-1,3,5-triazine-2,4-diyl]diimino]bis-,1,1'-bis(2-ethylhexyl) ester	LC_{50} : > 10mg/L (96h)(Fish)	EC_{50} : > 10mg/L (48h)(Crustaceans)	No information available
Sulisobenzone	LC_{50} : 215~464mg/L (96h)(Fish)	No information available	ErC_{50} : 109.55mg/L (72h)(Algae)
2-ethylhexyl 4-(dimethylamino)benzoate	LC_{50} : > 0.1mg/L (96h)(Fish)	EC_{50} : > 0.031mg/L (48h)(Crustaceans)	ErC_{50} : > 0.015mg/L (72h)(Algae)
Methanol	LC_{50} : 24000mg/L (96h)(Fish)	EC_{50} : 24500mg/L (48h)(Crustaceans)	No information available
Oxybenzone	LC_{50} : 3.8mg/L (96h)(Fish)	EC_{50} : 1.9mg/L (48h)(Crustaceans)	ErC_{50} : 0.67mg/L (72h)(Algae)

Chronic aquatic toxicity

Component	Fish	Crustaceans	Algae or other aquatic plants
(±)-1,7,7-trimethyl-3-[(4-methylphenyl)methylene]bicyclo[2.2.1]heptan-2-one	NOEC : 0.415mg/L(Fish)	No information available	No information available

Sulisobenzone	NOEC :> 4.897mg/L(Fish)	No information available	No information available
Oxybenzone	No information available	No information available	NOEC : 0.18mg/L(Algae)

12.2 Persistence and degradability

Component	Persistence (water/soil)	Persistence (air)
(±)-1,7,7-trimethyl-3-[(4-methylphenyl)methylene]bicyclo[2.2.1]heptan-2-one	High	High
Oxybenzone	High	High
Sulisobenzone	High	High
1-[4-(1,1-dimethylethyl)phenyl]-3-(4-methoxyphenyl)propane-1,3-dione	High	High
2-ethylhexyl 4-(dimethylamino)benzoate	High	High
2-ethylhexyl 4-methoxycinnamate	Low	Low
2-ethylhexyl salicylate	Low	Low
Homosalate	High	High
Isopentyl p-methoxycinnamate	High	High
2-phenyl-1H-benzimidazole-5-sulphonic acid	High	High
Methanol	Low	Low

12.3 Bioaccumulative potential

Component	Bioaccumulative potential	Comments
(±)-1,7,7-trimethyl-3-[(4-methylphenyl)methylene]bicyclo[2.2.1]heptan-2-one	High	Log Kow=5.2537
Oxybenzone	Low	BCF=160
Sulisobenzone	Low	Log Kow=-0.4102
1-[4-(1,1-dimethylethyl)phenyl]-3-(4-methoxyphenyl)propane-1,3-dione	High	Log Kow=4.5051
2-ethylhexyl 4-(dimethylamino)benzoate	High	Log Kow=5.37
2-ethylhexyl 4-methoxycinnamate	High	Log Kow=5.8021
2-ethylhexyl salicylate	High	Log Kow=5.9678
Homosalate	High	Log Kow=6.1619
Isopentyl p-methoxycinnamate	Medium	Log Kow=4.3288
2-phenyl-1H-benzimidazol	Low	Log Kow=0.5509

e-5-sulphonic acid		
Methanol	Low	BCF=10

12.4 Mobility in soil

Component	log Koc	Remark
(±)-1,7,7-trimethyl-3-[(4-methylphenyl)methylene]bicyclo[2.2.1]heptan-2-one	4.163	
Oxybenzone	2.98	20 ℃
Sulisobenzone	0.992	25 ℃， pH=4.8
1-[4-(1,1-dimethylethyl)phenyl]-3-(4-methoxyphenyl)propane-1,3-dione	4.65	20 ℃
Benzoic acid,4,4'-[[6-[[4-[[(1,1-dimethylethyl)amino]carbonyl]phenyl]amino]-1,3,5-triazine-2,4-diyl]diimino]bis-,1,1'-bis(2-ethylhexyl) ester	> 5.63	
2-ethylhexyl 4-(dimethylamino)benzoate	4.4	25 ℃
2-ethylhexyl 4-methoxycinnamate	4.089	
2-ethylhexyl salicylate	3.10	20 ℃
Homosalate	4.28	
Isopentyl p-methoxycinnamate	3.65283	
Octocrilene	4.69	20 ℃
2-phenyl-1H-benzimidazole-5-sulphonic acid	3.3	MCI method
Methanol	0.000	
Perchloric acid	1.64	20 ℃

12.5 Results of PBT and vPvB assessment

Component	Results of PBT and vPvB assessment [according to (EC) No 1907/2006]
1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one	Insufficient information, temporarily unable to evaluate
(±)-1,7,7-trimethyl-3-[(4-methylphenyl)methylene]bicyclo[2.2.1]heptan-2-one	Not PBT/vPvB
Oxybenzone	Not PBT/vPvB
Sulisobenzone	Not PBT/vPvB
Benzenesulfonic acid, 4-[(4,7,7-trimethyl-3-oxobicyclo[2.2.1]hept-2-ylidene)	Insufficient information, temporarily unable to evaluate

methyl]-	
1-[4-(1,1-dimethylethyl)phenyl]-3-(4-methoxyphenyl)propane-1,3-dione	Not PBT/vPvB
Methyl N,N,N-trimethyl-4-[(4,7,7-trimethyl-3-oxobicyclo[2.2.1]hept-2-ylidene)methyl]anilinium sulphate	Insufficient information, temporarily unable to evaluate
Benzoic acid,2-[4-(diethylamino)-2-hydroxybenzoyl]-, hexyl ester	Not PBT/vPvB
Benzoic acid,4,4'-[[6-[[4-[[(1,1-dimethylethyl)amino]carbonyl]phenyl]amino]-1,3,5-triazine-2,4-diyl]diimino]bis-,1,1'-bis(2-ethylhexyl) ester	Not PBT/vPvB
2-ethylhexyl 4-(dimethylamino)benzoate	Not PBT/vPvB
2-ethylhexyl 4-methoxycinnamate	Insufficient information, temporarily unable to evaluate
2-ethylhexyl salicylate	Not PBT/vPvB
Homosalate	Not PBT/vPvB
Isopentyl p-methoxycinnamate	Not PBT/vPvB
Octocrilene	Not PBT/vPvB
2-phenyl-1H-benzimidazole-5-sulphonic acid	Not PBT/vPvB
TEREPHTHALYLIDENE DICAMPHOR SULFONIC ACID	Insufficient information, temporarily unable to evaluate
Methanol	Not PBT/vPvB
Tetrahydrofuran	Not PBT/vPvB
Water	Insufficient information, temporarily unable to evaluate
Perchloric acid	Not applicable

12.6 Endocrine disrupting properties

Component	Endocrine disrupting properties
1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one	The substance is a ED, however, potential concerns for the environment have not been fully evaluated.
(±)-1,7,7-trimethyl-3-[(4-methylphenyl)methylene]bicyclo[2.2.1]heptan-2-one	No information available
Oxybenzone	No information available

Sulisobenzone	No information available
Benzenesulfonic acid, 4-[(4,7,7-trimethyl-3-oxobicyclo[2.2.1]hept-2-ylidene) methyl]-	No information available
1-[4-(1,1-dimethylethyl)phenyl]-3-(4-methoxyphenyl) propane-1,3-dione	No information available
Methyl N,N,N-trimethyl-4-[(4,7,7-trimethyl-3-oxobicyclo[2.2.1]hept-2-ylidene)methyl]anilinium sulphate	No information available
Benzoic acid,2-[4-(diethylamino)-2-hydroxybenzoyl]-, hexyl ester	No information available
Benzoic acid,4,4'-[[6-[[4-[[(1,1-dimethylethyl)amino]carbonyl] phenyl]amino]-1,3,5-triazine-2,4-diyl]diimino]bis-,1,1'-bis(2-ethylhexyl) ester	No information available
2-ethylhexyl 4-(dimethylamino)benzoate	No information available
2-ethylhexyl 4-methoxycinnamate	No information available
2-ethylhexyl salicylate	No information available
Homosalate	No information available
Isopentyl p-methoxycinnamate	No information available
Octocrilene	No information available
2-phenyl-1H-benzimidazole-5-sulphonic acid	No information available
TEREPHTHALYLIDENE DICAMPHOR SULFONIC ACID	No information available
Methanol	No information available
Tetrahydrofuran	No information available
Water	No information available
Perchloric acid	No information available

12.7 Other adverse effects

	No information available

13 Disposal considerations

13.1 Waste treatment methods

Waste chemicals	Before disposal should refer to the relevant national and local laws and regulation. Recommend the use of incineration disposal.
Contaminated packaging	Containers may still present chemical hazard when empty. Keep away from hot and ignition source of fire. Return to supplier for recycling if possible.
Disposal recommendations	Refer to section waste chemicals and contaminated packaging.

14 Transport information

Label and Mark

Transporting Label	

IMDG-CODE

UN number	1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S.
Transport hazard class	3
Transport subsidiary hazard class	None
Packing group	Ⅱ
Marine pollutant (Yes or no)	No

IATA-DGR

UN number	1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S.
Transport hazard class	3
Transport subsidiary hazard class	None
Packing group	Ⅱ

UN-ADR

UN number	1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S.
Transport hazard class	3
Transport subsidiary hazard class	None
Packing group	Ⅱ

Special precautions for user

	Shipment of the goods vehicle exhaust pipe must be equipped with fire retardant devices, prohibit using mechanical equipment and tools of which easy to produce sparks. Transit should be anti-exposure, anti-rain, anti-high temperature. Transportation used tank (tank) cars should be grounded chain, tank can be installed to reduce the partition hole static electricity shocks. Strictly prohibited shipping or transportation with oxidants, acids, food and food additives etc. When bulk transport, Prohibit the use of cement or wooden boats. Transport vehicles should be equipped with the appropriate variety and quantity of fire equipment and emergency equipment leakage during transport. Before transport, should be

	preceded by checking whether container integrity, sealing. The transport unit must be placarded and marked in accordance with relevant transporting requirements.

Maritime transport in bulk according to IMO instruments

◆Transport in bulk according to Annex II of MARPOL and the IBC code

	Not Available

◆Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

	Not Available

◆Transport in bulk in accordance with the IGC Code

	Not Available

15 Regulatory information

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

International chemical inventory

Component	A	B	C	D	E	F	G	H	I	J	K	L	M
1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one	√	√	√	√	√	√	×	√	×	×	×	√	√
(±)-1,7,7-trimethyl-3-[(4-methylphenyl)methylene]bicyclo[2.2.1]heptan-2-one	√	√	√	√	√	√	×	√	×	×	×	√	√
Oxybenzone	√	√	√	√	√	√	√	√	√	√	√	√	√
Sulisobenzone	√	√	√	√	√	√	√	√	√	√	×	√	√
Benzenesulfonic acid, 4-[(4,7,7-trimethyl-3-oxobicyclo[2.2.1]hept-2-ylidene)methyl]-	×	×	×	×	×	×	×	√	×	×	×	×	×
1-[4-(1,1-dimethylethyl)phenyl]-3-(4-methoxyphenyl)propane-1,3-dione	√	√	√	√	√	√	×	√	×	√	√	√	√
Methyl N,N,N-trimethyl-4-[(4,7,7-trimethyl-3-oxobicyclo[2.2.1]hept-2-ylidene)methyl]anilinium sulphate	×	√	×	×	×	×	×	√	×	×	×	√	×
Benzoic acid,2-[4-(diethylamino)-2-hydroxybenzoyl]-, hexyl ester	√	×	×	√	√	√	×	√	×	×	×	√	√
Benzoic acid,4,4'-[[6-[[4-[[(1,1-dimethylethyl)amino]carbonyl]phenyl]amino]-1,3,5-triazine-2,4-diyl]diimino]bis-,1,1'-bis(2-ethylhexyl) ester	×	×	×	×	×	×	×	×	×	×	×	√	×
2-ethylhexyl 4-(dimethylamino)benzoate	√	√	√	√	√	√	√	√	√	√	√	√	√
2-ethylhexyl 4-methoxycinnamate	√	√	√	√	√	√	√	√	√	√	√	√	√
2-ethylhexyl salicylate	√	√	√	√	√	√	×	√	√	×	√	√	√

Homosalate	√	√	√	√	√	√	×	√	√	×	×	√	√
Isopentyl p-methoxycinnamate	√	√	×	√	√	√	√	√	×	×	×	√	√
Octocrilene	√	√	√	√	√	√	√	√	√	√	√	√	√
2-phenyl-1H-benzimidazole-5-sulphonic acid	√	√	√	√	√	√	×	√	×	×	√	√	√
TEREPHTHALYLIDENE DICAMPHOR SULFONIC ACID	×	×	×	×	×	×	×	×	×	×	×	×	×
Methanol	√	√	√	√	√	√	√	√	√	√	√	√	√
Tetrahydrofuran	√	√	√	√	√	√	√	√	√	√	√	√	√
Water	√	√	√	√	√	√	√	√	√	√	√	√	√
Perchloric acid	√	√	√	√	√	√	√	√	√	√	√	√	√

【A】 China Inventory of Existing Chemical Substances(IECSC)
【B】 European Inventory of Existing Commercial Chemical Substances(EC inventory)
【C】 United States Toxic Substances Control Act Inventory(TSCA)
【D】 Canadian Domestic Substances List(DSL)
【E】 New Zealand Inventory of Chemicals(NZIoC)
【F】 Philippines Inventory of Chemicals and Chemical Substances(PICCS)
【G】 Korea Existing Chemicals Inventory(KECL)
【H】 Australian. Inventory of Industrial Chemical (AIICS)
【I】 Japan Inventory of Existing & New Chemical Substances(ENCS)
【J】 Thailand Existing Chemicals Inventory(TECI)
【K】 Mexico National Inventory of Chemical Substances (INSQ)
【L】 Russia Inventory of Existing Substances(DRAFT)
【M】 Inventory of Existing Chemical Substances in Taiwan, China (TCSI)

List of Chemical Substances under International Conventions

Component	A	B	C
1,7,7-trimethyl-3-(phenyl methylene)bicyclo[2.2.1]heptan-2-one	×	×	×
(±)-1,7,7-trimethyl-3-[(4-methylphenyl)methylene]bicyclo[2.2.1]heptan-2-one	×	×	×
Oxybenzone	×	×	×
Sulisobenzone	×	×	×
Benzenesulfonic acid, 4-[(4,7,7-trimethyl-3-oxobicyclo[2.2.1]hept-2-ylidene)methyl]-	×	×	×
1-[4-(1,1-dimethylethyl)phenyl]-3-(4-methoxyphenyl)propane-1,3-dione	×	×	×
Methyl N,N,N-trimethyl-4-[(4,7,7-trimethyl-3-oxobicyclo[2.2.1]hept-2-ylidene)methyl]anilinium sulphate	×	×	×
Benzoic acid,2-[4-(diethylamino)-2-hydroxybenzoyl]-, hexyl ester	×	×	×
Benzoic	×	×	×

acid,4,4'-[[6-[[4-[[(1,1-dimethylethyl)amino]carbonyl]phenyl]amino]-1,3,5-triazine-2,4-diyl]diimino]bis-, 1,1'-bis(2-ethylhexyl) ester			
2-ethylhexyl 4-(dimethylamino)benzoate	×	×	×
2-ethylhexyl 4-methoxycinnamate	×	×	×
2-ethylhexyl salicylate	×	×	×
Homosalate	×	×	×
Isopentyl p-methoxycinnamate	×	×	×
Octocrilene	×	×	×
2-phenyl-1H-benzimidazole-5-sulphonic acid	×	×	×
TEREPHTHALYLIDENE DICAMPHOR SULFONIC ACID	×	×	×
Methanol	×	×	×
Tetrahydrofuran	×	×	×
Water	×	×	×
Perchloric acid	×	×	×

【A】 The Montreal Protocol on Substances that Deplete the Ozone Layer
【B】 Stockholm Convention on Persistent Organic Pollutants (POPs)
【C】 Rotterdam Convention on the prior informed consent procedure for certain hazardous chemicals and pesticides in international trade

European chemical inventory

Component	A	B	C	D	E	F	G	H	I
1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one	√	×	×	√	×	×	×	×	×
(±)-1,7,7-trimethyl-3-[(4-methylphenyl)methylene]bicyclo[2.2.1]heptan-2-one	√	×	×	√	×	×	×	×	×
Oxybenzone	×	×	×	√	√	√	×	×	×
Sulisobenzone	×	×	×	√	√	×	×	×	×
Benzenesulfonic acid, 4-[(4,7,7-trimethyl-3-oxobicyclo[2.2.1]hept-2-ylidene)methyl]-	×	×	×	×	×	×	×	×	×
1-[4-(1,1-dimethylethyl)phenyl]-3-(4-methoxyphenyl)propane-1,3-dione	×	×	×	√	√	√	×	×	×
Methyl N,N,N-trimethyl-4-[	×	×	×	√	×	×	×	×	×

(4,7,7-trimethyl-3-oxobicyclo[2.2.1]hept-2-ylidene)methyl]anilinium sulphate									
Benzoic acid,2-[4-(diethylamino)-2-hydroxybenzoyl]-, hexyl ester	×	×	×	√	√	×	×	×	×
Benzoic acid,4,4'-[[6-[[4-[[(1,1-dimethylethyl)amino]carbonyl]phenyl]amino]-1,3,5-triazine-2,4-diyl]diimino]bis-,1,1'-bis(2-ethylhexyl) ester	×	×	×	√	√	√	×	×	×
2-ethylhexyl 4-(dimethylamino) benzoate	×	×	×	√	√	×	×	×	×
2-ethylhexyl 4-methoxycinnamate	×	×	×	√	×	×	×	×	×
2-ethylhexyl salicylate	×	×	×	√	√	√	×	×	×
Homosalate	×	×	×	√	√	×	×	×	×
Isopentyl p-methoxycinnamate	×	×	×	√	√	√	×	×	×
Octocrilene	×	×	×	√	√	√	×	×	×
2-phenyl-1H-benzimidazole-5-sulphonic acid	×	×	×	√	√	×	×	×	×
TEREPHTHALYLIDENE DICAMPHOR SULFONIC ACID	×	×	×	×	×	×	×	×	×
Methanol	×	×	√	√	√	√	×	×	×
Tetrahydrofuran	×	×	×	√	√	√	×	×	×
Water	×	×	×	√	×	×	×	×	×
Perchloric acid	×	×	×	√	√	×	×	×	×

[A] Candidate list of Substances of Very High Concern for authorization under EU REACH regulation
[B] Substances requiring authorisation under EU REACH regulation
[C] Substances restricted under EU REACH
[D] Pre-registered substances under EU REACH
[E] Registered substances under EU REACH
[F] Substance Evaluation – CoRAP under EU REACH
[G] List of priority substances under EU water policy （Directive 2455/2001/EC）
[H] Substances subject to POPs Regulation
[I] Substances proposed as POPs

Note:
"√" Indicates that the substance included in the regulations.
"×" No data or not included in the regulations.

German water hazard class(WGK)

Component	WGK	Remark

(±)-1,7,7-trimethyl-3-[(4-methylphenyl)methylene]bicyclo[2.2.1]heptan-2-one	WGK 2	
Oxybenzone	WGK 2	
Sulisobenzone	WGK 1	
1-[4-(1,1-dimethylethyl)phenyl]-3-(4-methoxyphenyl)propane-1,3-dione	WGK 2	
Benzoic acid,2-[4-(diethylamino)-2-hydroxybenzoyl]-, hexyl ester	WGK 1	
Benzoic acid,4,4'-[[6-[[4-[[(1,1-dimethylethyl)amino]carbonyl]phenyl]amino]-1,3,5-triazine-2,4-diyl]diimino]bis-, 1,1'-bis(2-ethylhexyl) ester	WGK 1	
2-ethylhexyl 4-(dimethylamino)benzoate	WGK 2	
2-ethylhexyl 4-methoxycinnamate	WGK 2	
2-ethylhexyl salicylate	WGK 2	
Homosalate	WGK 2	
Isopentyl p-methoxycinnamate	WGK 2	
Octocrilene	WGK 2	
2-phenyl-1H-benzimidazole-5-sulphonic acid	WGK 1	
Methanol	WGK 2	
Tetrahydrofuran	WGK 1	
Perchloric acid	WGK 1	

【WGK 1】 slightly hazardous to water
【WGK 2】 obviously hazardous to water
【WGK 3】 highly hazardous to water
【nwg】 non-hazardous to water
【awg】 hazardous to water in general

German technical instructions on air quality control(TA LUFT)

Component	TA LUFT	Remark
Oxybenzone	Chapter 5.2.5 Organic Substances, dust,including fine dust.To be treated as overall dust. The emissions of dust in the exhaust gas are not allowed to exceed the following values:Mass flow:0,20 kg/hr or Mass conc.:20 mg/m³ The mass per unit volume of 0,15 g/m³ in exhaust gas is not allowed to be exceeded also on observance or lower deviation of a mass flow of 0,20 kg/h.For emission sources that exceed the mass flow rate of 0.40 kg/h, the mass concentration in waste gas the mass concentration must not exceed 10 mg/m³.	
Sulisobenzone	Chapter 5.2.5 Organic Substances, dust,including fine dust.To be treated	

	as overall dust. The emissions of dust in the exhaust gas are not allowed to exceed the following values:Mass flow:0,20 kg/hr or Mass conc.:20 mg/m³ The mass per unit volume of 0,15 g/m³ in exhaust gas is not allowed to be exceeded also on observance or lower deviation of a mass flow of 0,20 kg/h.For emission sources that exceed the mass flow rate of 0.40 kg/h, the mass concentration in waste gas the mass concentration must not exceed 10 mg/m³.	
1-[4-(1,1-dimethylethyl)phenyl]-3-(4-methoxyphenyl)propane-1,3-dione	Chapter 5.2.5 Organic Substances, dust,including fine dust.To be treated as overall dust. The emissions of dust in the exhaust gas are not allowed to exceed the following values:Mass flow:0,20 kg/hr or Mass conc.:20 mg/m³ The mass per unit volume of 0,15 g/m³ in exhaust gas is not allowed to be exceeded also on observance or lower deviation of a mass flow of 0,20 kg/h.For emission sources that exceed the mass flow rate of 0.40 kg/h, the mass concentration in waste gas the mass concentration must not exceed 10 mg/m³.	
Benzoic acid,2-[4-(diethylamino)-2-hydroxybenzoyl]-, hexyl ester	Chapter 5.2.5 Organic Substances, dust,including fine dust.To be treated as overall dust. The emissions of dust in the exhaust gas are not allowed to exceed the following values:Mass flow:0,20 kg/hr or Mass conc.:20 mg/m³ The mass per unit volume of 0,15 g/m³ in exhaust gas is not allowed to be exceeded also on observance or lower deviation of a mass flow of 0,20 kg/h.For emission sources that exceed the mass flow rate of 0.40 kg/h, the mass concentration in waste gas the mass concentration must not exceed 10 mg/m³.	
2-ethylhexyl salicylate	Chapter 5.2.5 Organic Substances.The following values, specified as overall carbon, are in all not allowed to be exceeded in exhaust gas:Mass flow:0,50 kg/hr or Mass conc.:50 mg/m³ At old units with an annual mass flow till 1,5 Mg/a, specified as total carbon, the emissions in exhaust gas are not allowed to exceed 1,5 kg/h.	
Homosalate	Chapter 5.2.5 Organic Substances.The following values, specified as overall carbon, are in all not allowed to be exceeded in exhaust gas:Mass flow:0,50 kg/hr or Mass conc.:50 mg/m³ At old units	

	with an annual mass flow till 1,5 Mg/a, specified as total carbon, the emissions in exhaust gas are not allowed to exceed 1,5 kg/h.	
2-phenyl-1H-benzimidazole-5-sulphonic acid	Chapter 5.2.5 Organic Substances, dust,including fine dust.To be treated as overall dust. The emissions of dust in the exhaust gas are not allowed to exceed the following values:Mass flow:0,20 kg/hr or Mass conc.:20 mg/m³ The mass per unit volume of 0,15 g/m³ in exhaust gas is not allowed to be exceeded also on observance or lower deviation of a mass flow of 0,20 kg/h.For emission sources that exceed the mass flow rate of 0.40 kg/h, the mass concentration in waste gas the mass concentration must not exceed 10 mg/m³.	
Methanol	Chapter 5.2.5 Organic Substances, class I. The following values are in all not allowed to be exceeded in the exhaust gas:Mass flow:0,10 kg/hr or Mass conc.:20 mg/m³	
Tetrahydrofuran	Chapter 5.2.5 Organic Substances, class I. The following values are in all not allowed to be exceeded in the exhaust gas:Mass flow:0,10 kg/hr or Mass conc.:20 mg/m³	

German technical rules for hazardous substances(TRGS)

Component	TRGS	Remark
Oxybenzone	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 500|TRGS 509|TRGS 510|TRGS 800	
Sulisobenzone	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 401|TRGS 500|TRGS 509|TRGS 510|TRGS 800	
1-[4-(1,1-dimethylethyl)phenyl]-3-(4-methoxyphenyl)propane-1,3-dione	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 500|TRGS 509|TRGS 510|TRGS 800	
Benzoic acid,2-[4-(diethylamino)-2-hydroxybenzoyl]-, hexyl ester	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 500|TRGS 509|TRGS 510	
2-ethylhexyl salicylate	TRGS 500|TRGS 509|TRGS 510|TRGS 800	
Homosalate	TRGS 500|TRGS 509|TRGS 510|TRGS 800	
2-phenyl-1H-benzimidazole-5-sulphonic acid	TRGS 500|TRGS 509|TRGS 510|TRGS 800	
Methanol	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 402|TRGS 401|TRGS 500|TRGS 509|TRGS 510|TRGS 800|TRGS 720|TRGS 721|TRGS 722|TRGS 723|TRGS 724	
Tetrahydrofuran	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 402|TRGS 401|TRGS 500|TRGS 509|TRGS	

	510|TRGS 800|TRGS 720|TRGS 721|TRGS 722|TRGS 723|TRGS 724	
Water	TRGS 500|TRGS 509|TRGS 510	
Perchloric acid	TRGS 201|TRGS 400|TRGS 555|TRGS 600|TRGS 401|TRGS 500|TRGS 509|TRGS 510|TRGS 800	

15.2 Chemical safety assessment

	No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

16 Other information

Information on revision

Creation Date	2025/12/11
Revision Date	-
Reason for revision	-

Reference

[1] IPCS: The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home.
[2] IARC, website: http://www.iarc.fr/.
[3] OECD: The Global Portal to Information on Chemical Substances, website: https://www.echemportal.org/echemportal/.
[4] CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple.
[5] NLM: ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp.
[6] EPA: Integrated Risk Information System, website: http://cfpub.epa.gov/iris/.
[7] U.S. Department of Transportation: ERG, website: http://www.phmsa.dot.gov/hazmat/library/erg.
[8] Germany GESTIS-database on hazard substance, website: http://gestis-en.itrust.de/.

Abbreviations and acronyms

CAS	Chemical Abstracts Service	UN	The United Nations
PC-STEL	Short term exposure limit	OECD	Organization for Economic Co-operation and Development
PC-TWA	Time Weighted Average	IMDG-CODE	International Maritime Dangerous Goods CODE
MAC	Maximum Allowable Concentration	IARC	International Agency for Research on Cancer
DNEL	Derived No Effect Level	ICAO	International Civil Aviation Organization
PNEC	Predicted No Effect Concentration	IATA	International Air Transportation Association
NOEC	No Observed Effect Concentration	ACGIH	American Conference of Governmental Industrial Hygienists
LC_{50}	Lethal Concentration 50%	NFPA	National Fire Protection Association
LD_{50}	Lethal Dose 50%	NTP	National Toxicology Program
EC_{50}	Effective Concentration 50%	PBT	Persistent, Bioaccumulative, Toxic
EC_X	Effective Concentration X%	vPvB	very Persistent, very Bioaccumulative
P_{OW}	Partition coefficient Octanol: Water	CMR	Carcinogens, mutagens or substances toxic to reproduction
BCF	Bioconcentration factor	RPE	Respiratory Protective Equipment
ED	Endocrine disruptor		

Disclaimer

This Safety Data Sheet (SDS) was prepared according to REACH Regulation The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.