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

1.1. Product identifier

Trade name **BTMS PALM FREE**

Chemical nature: Behenyltrimethylammonium methosulphate (contains ca. 17.5% isopropanol.)

INCI name: Behentrimonium Methosulfate

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

Relevant identified uses of the substance or mixture

Industry sector : Personal Care
Type of use : Surface active agent for cosmetics

Exposure scenarios: see annex

1.3. Details of the supplier of the safety data sheet

Identification of the company

Company Name: BAY HOUSE INGREDIENTS
Contact: JOHN BLACK
Address: Unit 3 Quatro Park, Tanners Drive, Milton Keynes MK14 5FJ ENGLAND
Telephone : + 44 (0) 1908 210270
Fax: + 44 (0) 1908 211376
Email : sales@bay-house.co.uk

1.4. Emergency telephone number

+ 44 (0) 1908 210270

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Skin irritation, Category 2	H315: Causes skin irritation.
Serious eye damage, Category 1	H318: Causes serious eye damage.
Specific target organ toxicity - repeated exposure, Category 2	H373: May cause damage to organs through prolonged or repeated exposure.
Short-term (acute) aquatic hazard, Category 1	H400: Very toxic to aquatic life.
Long-term (chronic) aquatic hazard, Category 2	H411: Toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Danger

Hazard statements :
H315 Causes skin irritation.
H318 Causes serious eye damage.
H373 May cause damage to organs through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

P260 Do not breathe dust.
P273 Avoid release to the environment.
P280 Wear protective gloves/ eye protection/ face protection.

Response:

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P391 Collect spillage.

Disposal:

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

Hazardous components which must be listed on the label:
Docosyltrimethylammonium methosulphate

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Flammable solvent vapours may collect in the vapour spaces of closed containers. Keep away from fire and other sources of ignition.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name INCI Name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Docosyltrimethylammonium methosulphate Behentrimonium Methosulfate	81646-13-1 279-791-1 01-2119949051-44-0000	Skin Irrit. 2; H315 Eye Dam. 1; H318 STOT RE 2; H373 (Gastrointestinal tract) Aquatic Acute 1; H400 Aquatic Chronic 2; H411	78 - 82 %
Propan-2-ol Isopropyl Alcohol	67-63-0 200-661-7 603-117-00-0 01-2119457558-25 01-2119457558-25-0001 01-2119457558-25-0002 01-2119457558-25-0006 01-2119457558-25-0016 01-2119457558-25-0028 01-2119457558-25-0083 01-2119457558-25-0150 01-2119457558-25-0163 01-2119457558-25-XXXX	Flam. Liq. 2; H225 Eye Irrit. 2; H319 STOT SE 3; H336 (Central nervous system)	16 - 19 %
Aqua	7732-18-5 231-791-2		2 - 3 %

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Get medical advice/ attention if you feel unwell.
Remove/ Take off immediately all contaminated clothing.

If inhaled : Remove to fresh air.
Get medical attention if symptoms occur.

In case of skin contact	:	In case of contact, immediately flush skin with soap and plenty of water.
In case of eye contact	:	In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
If swallowed	:	Get medical attention immediately.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms	:	irritant effects Damage
Risks	:	Causes skin irritation. Causes serious eye irritation. May cause damage to organs through prolonged or repeated exposure.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment	:	Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Water spray jet Alcohol-resistant foam
Unsuitable extinguishing media	:	Carbon dioxide (CO2) Dry powder High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting	:	In case of fires, hazardous combustion gases are formed: Carbon monoxide (CO) Nitrogen oxides (NOx) Sulphur trioxide

5.3 Advice for firefighters

Special protective equipment for firefighters	:	Self-contained breathing apparatus

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Wear suitable protective equipment. Ensure adequate ventilation. Keep away sources of ignition.

6.2 Environmental precautions

Environmental precautions	:	The product should not be allowed to enter drains, water courses or the soil.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up	:	Pick up mechanically. Rinse away rest with warm water.

6.4 Reference to other sections

Information regarding Safe handling, see chapter 7., For personal protection see section 8., For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling	:	Provide adequate ventilation. Take measures to prevent the build up of electrostatic charge. Handle and open container with care.
Advice on protection against fire and explosion	:	not highly flammable Take precautionary measures against electrostatic charging. In order to avoid electrostatic charging, do not roll or drag the drum, After transportation, the container should be allowed to stand for one hour before opening, thus allowing sufficient time for charge relaxation in the container. Flammable solvent vapours may collect in the vapour spaces of closed containers. Keep away from fire and other sources of ignition.
Hygiene measures	:	Wash hands before breaks and at the end of workday. Use protective skin cream before handling the product. Take off immediately all contaminated clothing and wash it before reuse.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	No special measures necessary.
Further information on storage conditions	:	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep only in the original container at temperature not exceeding 40 °C hygroscopic Keep away from direct sunlight.

7.3 Specific end use(s)

Specific use(s)	:	No further recommendations.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
Propan-2-ol CAS-No.: 67-63-0	Workers	Dermal	Long-term systemic effects	888 mg/kg bw/day
	Remarks:DNEL			
	Workers	Inhalation	Long-term systemic effects	500 mg/m3
	Remarks:DNEL			
	Consumers	Dermal	Long-term systemic effects	319 mg/kg bw/day
	Remarks:DNEL			
	Consumers	Inhalation	Long-term systemic effects	89 mg/m3
	Remarks:DNEL			
	Consumers	Oral	Long-term systemic effects	26 mg/kg bw/day
	Remarks:DNEL			

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
Propan-2-ol CAS-No.: 67-63-0	Fresh water	140.9 mg/l
	Marine water	140.9 mg/l
	Fresh water sediment	552 mg/kg dry weight (d.w.)
	Marine sediment	552 mg/kg dry weight (d.w.)
	Soil	28.0 mg/kg dry weight (d.w.)
	Water (intermittent release)	140.9 mg/l
	Sewage treatment plant	2251 mg/l
	Oral	160 mg/kg food

8.2 Exposure controls

Personal protective equipment

Eye protection : Depending on the risk, wear sufficient eye protection (safety glasses with side protection or goggles, and if necessary, face shield.)

Hand protection

Remarks : These types of protective gloves are offered by various manufacturers. Please note the manufacturers´ detailed statements, especially about the minimum thickness and the minimum breakthrough time. Consider also the particular working conditions under which the gloves are being used.

Remarks : For short-term exposure (splash protection): Nitrile rubber

gloves. Minimum thickness (glove): not determined With solid dry substances permeation is not to be expected, therefore the breakthrough-time for this protective glove has not been measured.

Remarks : Long-term exposure Impervious butyl rubber gloves Minimum thickness (glove): not determined With solid dry substances permeation is not to be expected, therefore the breakthrough-time for this protective glove has not been measured.

Respiratory protection : Use respiratory protection in case of insufficient exhaust ventilation or prolonged exposure
Full mask to standard DIN EN 136
Filter A (organic gases and vapours) to standard DIN EN 141
The use of filter apparatus presupposes that the environment atmosphere contains at least 17% oxygen by volume, and does not exceed the maximum gas concentration, usually 0.5% by volume. Relevant guidelines to be considered include EN 136/141/143/371/372 as well as other national regulations.

Protective measures : Do not inhale vapours
Avoid contact with skin and eyes.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	:	pellets
Colour	:	white to light yellow
Odour	:	of isopropanol
Odour Threshold	:	not tested.
Melting point	:	80 - 85 °C Method: DIN 51004
Boiling point	:	Decomposes below the boiling point.
Upper explosion limit / upper flammability limit	:	Not applicable
Lower explosion limit / Lower flammability limit	:	Not applicable
Flash point	:	Not applicable
Auto-ignition temperature	:	Not applicable
Decomposition temperature	:	approx. 288 °C Method: DTA

pH	:	7.0 - 9.0 Concentration: 1 % Method: DIN EN 1262 Isopropanol/Water 1:1
Viscosity		
Viscosity, dynamic	:	Not applicable
Viscosity, kinematic	:	Not applicable
Solubility(ies)		
Water solubility	:	0.05 g/l (70 °C) soluble, turbid
Partition coefficient: n-octanol/water	:	Not applicable
Vapour pressure	:	43 hPa Data relate to solvent
Density	:	0.9 g/cm3 (20 °C) Method: DIN 51757
Relative vapour density	:	2.7 The data refer to the solvent
Particle characteristics		
Particle size	:	no data available

9.2 Other information

Flammable solids		
Burning rate	:	265 s
Burning number	:	5 Complete combustion with flames
Self-ignition	:	The substance or mixture is not classified as self heating.
Metal corrosion rate	:	Not applicable
Evaporation rate	:	Not applicable

SECTION 10: Stability and reactivity

10.1 Reactivity

See section 10.3. "Possibility of hazardous reactions"

10.2 Chemical stability

Stable
The product is sensitive to light.
hygroscopic

10.3 Possibility of hazardous reactions

Hazardous reactions : Uncleaned empty vessels may contain product gases which can form explosive mixtures with air.

10.4 Conditions to avoid

Conditions to avoid : Keep away from heat.
Keep away from flames and sparks.

10.5 Incompatible materials

Materials to avoid : not known

10.6 Hazardous decomposition products

No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

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

Acute toxicity

Product:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 401
Remarks: Information refers to the main component.

Acute inhalation toxicity : Remarks: not tested.

Acute dermal toxicity : Remarks: not tested.

Components:

Docosyltrimethylammonium methosulphate:

Acute oral toxicity : LD50 (Rat, female): 3,190 mg/kg
Method: OECD Test Guideline 401
Assessment: The substance or mixture has no acute oral toxicity
Remarks: By analogy with a product of similar composition

Acute inhalation toxicity : Remarks: no data available

Acute dermal toxicity : LD50: > 2,000 mg/kg
Method: Other
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: By analogy with a product of similar composition

Propan-2-ol:

Acute oral toxicity : LD50 (Rat, no data available): 5,840 mg/kg
Method: OECD Test Guideline 401
GLP: no

Acute inhalation toxicity : LC50 (Rat, male and female): > 25 mg/l, > 10000 ppm

Exposure time: 6 h
Test atmosphere: vapour
Method: OECD Test Guideline 403
GLP: yes

Acute dermal toxicity : LD50 (Rabbit, no data available): 13,900 mg/kg
Method: OECD Test Guideline 402
GLP: no

Skin corrosion/irritation

Product:

Species : Rabbit
Method : OECD Test Guideline 404
Result : irritating
Remarks : Information refers to the main component.

Components:

Docosyltrimethylammonium methosulphate:

Species : Rabbit
Method : Other
Result : Skin irritation
Remarks : By analogy with a product of similar composition

Propan-2-ol:

Species : Rabbit
Exposure time : 4 h
Method : Other
Result : No skin irritation
GLP : no

Serious eye damage/eye irritation

Product:

Species : rabbit eye
Method : OECD Test Guideline 405
Result : Risk of serious damage to eyes.
Remarks : Information refers to the main component.

Components:

Docosyltrimethylammonium methosulphate:

Species : Rabbit
Method : Other
Result : Risk of serious damage to eyes.
Remarks : By analogy with a product of similar composition

Propan-2-ol:

Species : Rabbit
Method : OECD Test Guideline 405

Result	:	Irritating to eyes.
GLP	:	no

Respiratory or skin sensitisation

Product:

Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	non-sensitizing

Components:

Docosyltrimethylammonium methosulphate:

Test Type	:	Maximisation Test
Species	:	Guinea pig
Method	:	Other
Result	:	Not a skin sensitizer.
Assessment	:	Causes skin irritation., Causes serious eye damage.

Propan-2-ol:

Test Type	:	Buehler Test
Exposure routes	:	Skin contact
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Not a skin sensitizer.
GLP	:	yes

Germ cell mutagenicity

Product:

Germ cell mutagenicity-Assessment	:	Not mutagenic in Ames Test

Components:

Docosyltrimethylammonium methosulphate:

Genotoxicity in vitro	:	Test Type: Ames test Test system: Salmonella typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative Remarks: By analogy with a product of similar composition Test Type: Mammalian cell gene mutation assay Test system: Chinese hamster fibroblasts Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative Remarks: By analogy with a product of similar composition

Test Type: Micronucleus test
Test system: Chinese hamster fibroblasts
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 487
Result: negative
Remarks: By analogy with a product of similar composition

Germ cell mutagenicity-Assessment : In vitro tests did not show mutagenic effects

Propan-2-ol:

Genotoxicity in vitro : Test Type: In vitro gene mutation study in mammalian cells
Test system: Chinese hamster ovary cells
Concentration: 500 - 5000 µg/ml
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative
GLP: yes

Test Type: Ames test
Test system: Salmonella typhimurium
Concentration: 100 - 10000 µg/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: no

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse (male and female)
Strain: ICR
Cell type: Bone marrow
Application Route: Intraperitoneal injection
Exposure time: Single exposure
Dose: 350-1173-2500-3500 mg/kg
Method: OECD Test Guideline 474
Result: negative
GLP: yes

Germ cell mutagenicity-Assessment : In vitro tests did not show mutagenic effects, In vivo tests did not show mutagenic effects

Carcinogenicity

Product:

Carcinogenicity - Assessment : No information available.

Components:

Docosyltrimethylammonium methosulphate:

Carcinogenicity - Assessment : No information available.

Propan-2-ol:

Species	:	Rat, male and female
Application Route	:	Inhalation
Exposure time	:	104 w
Dose	:	200 - 2500 - 5000 ppm
Control Group	:	yes
Frequency of Treatment	:	6 hours/day, 5 days/week
	:	ca. 12.29 mg/l
Method	:	OECD Test Guideline 451
GLP	:	yes

Carcinogenicity - Assessment : Did not show carcinogenic effects in animal experiments.

Reproductive toxicity

Product:

Reproductive toxicity - Assessment : No information available.

No information available.

Components:

Docosyltrimethylammonium methosulphate:

Effects on fertility : Species: Rat, male and female
Strain: wistar
Application Route: oral (gavage)
General Toxicity - Parent: NOAEL: 30 mg/kg body weight
General Toxicity F1: NOAEL: 30 mg/kg body weight
Method: OECD Test Guideline 421

Reproductive toxicity - Assessment : No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

Propan-2-ol:

Effects on fertility : Test Type: Fertility/early embryonic development
Species: Rat, male and female
Strain: wistar
Application Route: Drinking water
Dose: 0,5 - 1 - 2 %
General Toxicity - Parent: NOAEL: 853 mg/kg body weight
Method: OECD Test Guideline 415
GLP: yes

Test Type: Two-generation study
Species: Rat, male and female
Strain: Sprague-Dawley
Application Route: oral (gavage)
Dose: 100 - 500 - 1000 mg/kg
General Toxicity - Parent: NOAEL: 500 mg/kg body weight

General Toxicity F1: NOAEL: 500 mg/kg body weight
General Toxicity F2: NOAEL: 500 mg/kg body weight
Method: OECD Test Guideline 416
GLP: yes

Effects on foetal development : Test Type: Pre-natal
Species: Rat
Strain: wistar
Application Route: Drinking water
Dose: 0,5 - 1,25 - 2,5 %
Duration of Single Treatment: 10 d
General Toxicity Maternal: NOAEL: 596 mg/kg body weight
Developmental Toxicity: NOAEL: 596 mg/kg body weight
Method: OECD Test Guideline 414
GLP: yes

Test Type: Pre-natal
Species: Rat
Strain: Sprague-Dawley
Application Route: oral (gavage)
Dose: 400 - 800 - 1200 mg/kg
Duration of Single Treatment: 9 d
General Toxicity Maternal: NOAEL: 400 mg/kg body weight
Teratogenicity: NOAEL: 400 mg/kg body weight
Developmental Toxicity: NOAEL: 400 mg/kg body weight
Method: OECD Test Guideline 414
GLP: yes

Reproductive toxicity - Assessment : No reproductive toxicity to be expected.
No teratogenic effects to be expected.

STOT - single exposure

Product:

Remarks : not tested.

Components:

Docosyltrimethylammonium methosulphate:

Remarks : no data available

Propan-2-ol:

Assessment : May cause drowsiness or dizziness.

STOT - repeated exposure

Product:

Remarks : not tested.

Components:

Docosyltrimethylammonium methosulphate:

Exposure routes	:	Oral
Target Organs	:	Gastrointestinal tract
Assessment	:	The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

Propan-2-ol:

Assessment	:	The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Repeated dose toxicity

Product:

Species	:	Rat
NOAEL	:	10 mg/kg
Exposure time	:	28 d
Method	:	OECD Test Guideline 407
Remarks	:	Information refers to the main component.

Components:

Docosyltrimethylammonium methosulphate:

Species	:	Rat, male and female
NOAEL	:	10 mg/kg bw/day
Application Route	:	oral (gavage)
Exposure time	:	28d
Dose	:	10, 50, 150 mg/kg/day
Method	:	Other
Target Organs	:	Gastrointestinal tract
Remarks	:	By analogy with a product of similar composition

Propan-2-ol:

Species	:	Rat, male and female
NOAEL	:	12.5 mg/l
Application Route	:	Inhalation
Test atmosphere	:	vapour
Exposure time	:	2 a
Number of exposures	:	6 hours/day, 5 days/week
Dose	:	500 - 2500 - 5000 ppm
Control Group	:	yes
Method	:	Other
GLP	:	yes

Aspiration toxicity

Product:

no data available

Components:

Docosyltrimethylammonium methosulphate:
no data available

Propan-2-ol:
No aspiration toxicity classification

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment	:	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish	:	LC50 (Danio rerio (zebra fish)): 0.5 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	Remarks: not tested.
Toxicity to algae/aquatic plants	:	Remarks: not tested.
Toxicity to microorganisms	:	Remarks: not tested.

Components:

Docosyltrimethylammonium methosulphate:

Toxicity to fish	:	LC50 (Danio rerio (zebra fish)): 3.5 mg/l Exposure time: 96 h Test Type: static test Method: OECD Test Guideline 203 Remarks: By analogy with a product of similar composition
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 1.39 mg/l Exposure time: 48 h Test Type: static test Method: OECD Test Guideline 202 Remarks: By analogy with a product of similar composition

Toxicity to algae/aquatic plants	:	EC50 (Desmodesmus subspicatus (green algae)): 3.48 mg/l Exposure time: 72 h Test Type: static test Method: OECD Test Guideline 201 Remarks: By analogy with a product of similar composition
Toxicity to microorganisms	:	EC50 (activated sludge, domestic): 43 mg/l Exposure time: 3 h Test Type: static test Method: OECD Test Guideline 209 Remarks: By analogy with a product of similar composition
Toxicity to fish (Chronic toxicity)	:	NOEC: 0.24 mg/l Exposure time: 9 d Species: Danio rerio (zebra fish) Test Type: semi-static test Method: OECD Test Guideline 212 Remarks: By analogy with a product of similar composition
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 128 µg/l End point: Reproduction rate Exposure time: 21 d Species: Daphnia magna (Water flea) Test Type: semi-static test Remarks: By analogy with a product of similar composition
Toxicity to soil dwelling organisms	:	Test Type: artificial soil 1,000 mg/kg Exposure time: 14 d End point: mortality Species: Eisenia fetida (earthworms) Method: OECD Test Guideline 207 Remarks: By analogy with a product of similar composition
Sediment toxicity	:	NOEC: 62.5 mg/kg dry weight (d.w.) Test Type: static test Species: Lumbriculus variegatus (Worm) Method: OECD 225 Remarks: By analogy with a product of similar composition

Ecotoxicology Assessment

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

Propan-2-ol:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 9,640 mg/l End point: mortality Exposure time: 96 h Test Type: flow-through test Analytical monitoring: yes Method: OECD Test Guideline 203

GLP: no

Toxicity to daphnia and other aquatic invertebrates	:	LC50 (Daphnia magna (Water flea)): > 10,000 mg/l End point: Immobilization Exposure time: 24 h Test Type: static test Analytical monitoring: no Method: OECD Test Guideline 202 GLP: no
Toxicity to algae/aquatic plants	:	EC10 (Scenedesmus quadricauda (Green algae)): ca. 1,800 mg/l End point: Growth rate Exposure time: 7 d Test Type: static test Analytical monitoring: no Method: Other GLP: no
Toxicity to microorganisms	:	EC10 (Pseudomonas putida): ca. 1,050 mg/l Exposure time: 16 h Test Type: static test Analytical monitoring: no Method: DIN 38412 T.8 GLP: no
Toxicity to fish (Chronic toxicity)	:	Remarks: not required
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	Remarks: not required
Plant toxicity	:	IC50: 2,104 mg/l Exposure time: 3 d End point: Growth Species: Lactuca sativa (lettuce) Analytical monitoring: no Method: Other GLP:no
Sediment toxicity	:	Remarks: Not applicable
Toxicity to terrestrial organisms	:	Remarks: Not applicable

12.2 Persistence and degradability

Product:

Biodegradability	:	Biodegradation: 80 % Exposure time: 28 d Method: OECD Test Guideline 301B Remarks: Information refers to the main component.

Biodegradation: > 80 %
Method: OECD Test Guideline 302B

Components:

Docosyltrimethylammonium methosulphate:

Biodegradability : Inoculum: activated sludge, domestic
Result: Readily biodegradable.
Biodegradation: 80 %
Related to: Carbon dioxide (CO2)
Exposure time: 28 d
Method: Other
Remarks: By analogy with a product of similar composition

Propan-2-ol:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge
Result: Readily biodegradable.
Biodegradation: 53 %
Related to: Biochemical Oxygen Demand (BOD)
Exposure time: 5 d
Method: Directive 67/548/EEC, Annex V, C.5
GLP: no

Stability in water : Remarks: Not applicable

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: not tested.

Components:

Docosyltrimethylammonium methosulphate:

Bioaccumulation : Remarks: Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected.

Partition coefficient: n-octanol/water : log Pow: 3.01 (20 °C)
Method: OECD Test Guideline 107

Propan-2-ol:

Bioaccumulation : Remarks: Not applicable

Partition coefficient: n-octanol/water : log Pow: 0.05
pH: 25
Method: No information available.

12.4 Mobility in soil

Product:

Distribution among : Remarks: not tested.

environmental compartments

Components:

Docosyltrimethylammonium methosulphate:

Distribution among environmental compartments	:	Medium: Other Koc: > 950 - < 516000, log Koc: > 3 - < 5.7 Method: OECD Test Guideline 106 Remarks: By analogy with a product of similar composition
Stability in soil	:	Test Type: Laboratory Soil temperature: 20 °C Dissipation time: 23.2 d Percentage dissipation: 50 % (DT50) Method: Other Remarks: By analogy with a product of similar composition

Propan-2-ol:

Distribution among environmental compartments	:	Remarks: Not applicable

12.5 Results of PBT and vPvB assessment

Product:

Assessment	:	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Components:

Docosyltrimethylammonium methosulphate:

Assessment	:	The substance is not identified as a PBT or as a vPvB substance.

Propan-2-ol:

Assessment	:	This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

12.6 Endocrine disrupting properties

Product:

Assessment	:	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

Product:

Environmental fate and pathways	:	no data available
Additional ecological information	:	no data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product	:	In accordance with local authority regulations, take to special waste incineration plant
Contaminated packaging	:	Packaging that cannot be cleaned should be disposed of as product waste

SECTION 14: Transport information

Section 14.1. to 14.5.

ADR

UN no.	UN 3077
Proper shipping name:	Environmentally hazardous substance, solid, n.o.s.
Hazard inducer(s):	Behenyl trimethyl ammonium methosulfate
Class:	9
Primary risk:	9
Packing group:	III
Hazard no. :	90
Remarks	Shipment permitted

ADN

UN no.	UN 3077
Proper shipping name:	Environmentally hazardous substance, solid, n.o.s.
Hazard inducer(s):	Behenyl trimethyl ammonium methosulfate
Class:	9
Primary risk:	9
Packing group:	III
Remarks	Shipment permitted

RID

UN no.	UN 3077
Proper shipping name:	Environmentally hazardous substance, solid, n.o.s.
Hazard inducer(s):	Behenyl trimethyl ammonium methosulfate
Class:	9
Primary risk:	9
Packing group:	III
Hazard no. :	90
Remarks	Shipment permitted

IATA

UN no.	UN 3077
Proper shipping name:	Environmentally hazardous substance, solid, n.o.s.
Hazard inducer(s):	Behenyl trimethyl ammonium methosulfate
Class:	9
Primary risk:	9
Packing group:	III
Remarks	Shipment permitted

IMDG

UN no.	UN 3077
Proper shipping name:	Environmentally hazardous substance, solid, n.o.s.
Hazard inducer(s):	Behenyl trimethyl ammonium methosulfate
Class:	9
Primary risk:	9
Packing group:	III
Remarks	Shipment permitted
Marine pollutant:	Marine Pollutant
EmS :	F-A S-F

14.6. Special precautions for user

See sections 6 to 8 of this Safety Data Sheet.

14.7. Maritime transport in bulk according to IMO instruments

No transport as bulk according IBC - Code.

Further information

Non-dangerous good of class 9 for packagings <= 5 L / 5 kg

SECTION 15: Regulatory information

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

Relevant EU provisions transposed through retained EU law

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)	:	Not applicable
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	Not applicable
REACH - List of substances subject to authorisation (Annex XIV)	:	Not applicable
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	:	Not applicable
Regulation (EU) 2019/1021 on persistent organic pollutants (recast)	:	Not applicable
Council Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and	:	Neither banned nor restricted

third countries in drug precursors

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals	:	Not applicable
UK REACH List of substances subject to authorisation (Annex XIV)	:	Not applicable

Other regulations:

Apart from the data/regulations specified in this chapter, no further information is available concerning safety, health and environmental protection.

15.2 Chemical safety assessment

Chemical Safety Assessments (CSAs) are available for one or more of the component substances contained in this product.

SECTION 16: Other information

Full text of H-Statements

H225	:	Highly flammable liquid and vapour.
H315	:	Causes skin irritation.
H318	:	Causes serious eye damage.
H319	:	Causes serious eye irritation.
H336	:	May cause drowsiness or dizziness.
H373	:	May cause damage to organs through prolonged or repeated exposure if swallowed.
H400	:	Very toxic to aquatic life.
H411	:	Toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Aquatic Acute	:	Short-term (acute) aquatic hazard
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Eye Dam.	:	Serious eye damage
Eye Irrit.	:	Eye irritation
Flam. Liq.	:	Flammable liquids
Skin Irrit.	:	Skin irritation
STOT RE	:	Specific target organ toxicity - repeated exposure
STOT SE	:	Specific target organ toxicity - single exposure

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing

Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Further information

Other information : Observe national and local legal requirements

Classification of the mixture:		**Classification procedure:**
Skin Irrit. 2	H315	Based on product data or assessment
Eye Dam. 1	H318	Based on product data or assessment
STOT RE 2	H373	Calculation method
Aquatic Acute 1	H400	Based on product data or assessment
Aquatic Chronic 2	H411	Calculation method

The information given on this material health and safety sheet is not awarranty as to the performance or suitability of the product. The information must be regarded only as a description of the health, safety and environmental requirements for that product. The information contained herein is true and accurate to the best of our knowledge and belief, but does not claim to be all inclusive.
Bay House Ingredients is a Division of Aroma Trading Ltd, Registered No. 2698381, V.A.T. Registration No. 600 516 981 and as such, shall not be held liable for any damage resulting from handling or from contact with the product, since the conditions of use are out of our control. It is the responsibility of the user to take all necessary measures to comply with legal requirements and local regulations.

Exposure scenario

Number	Title
ES 1	**Formulation or re-packing; Cosmetics, personal care products** SU10 - PROC1, PROC2, PROC3, PROC5, PROC8a, PROC8b, PROC9, PROC15 - ERC2 Docosyltrimethylammonium methyl sulphate
ES 2	**Consumer use; Cosmetics, personal care products** PC39 - ERC8a Docosyltrimethylammonium methyl sulphate

1. ES 1: Formulation or re-packing; Cosmetics, personal care products; SU10

1.1. Title section

Formulation [mixing] of preparations and/or re-packaging (SU10)		
Environment		
CS1:	Formulation or re-packing (Formulation into mixture)	ERC2
Workers		
CS2:	Formulation or re-packing (Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions)	PROC1
CS3:	Formulation or re-packing (Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions)	PROC2
CS4:	Formulation or re-packing (Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition)	PROC3
CS5:	Formulation or re-packing (Mixing or blending in batch processes)	PROC5
CS6:	Formulation or re-packing (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities)	PROC8a
CS7:	Formulation or re-packing (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities)	PROC8a
CS8:	Formulation or re-packing (Transfer of substance or mixture (charging/discharging) at dedicated facilities)	PROC8b
CS9:	Formulation or re-packing (Transfer of substance or mixture (charging/discharging) at dedicated facilities)	PROC8b
CS10:	Formulation or re-packing (Transfer of substance or mixture into small containers (dedicated filling line, including weighing))	PROC9
CS11:	Formulation or re-packing (Transfer of substance or mixture into small containers (dedicated filling line, including weighing))	PROC9
CS12:	Formulation or re-packing (Use as laboratory reagent)	PROC15

1.2. ES 1 Conditions of use affecting exposure

1.2.1 ES 1 - CS 1: Control of environmental exposure: Formulation or re-packing (Formulation into mixture) (ERC2)

Product characteristics

Concentration of the Substance in Mixture/Article	:	<= 100 %
Molecular weight	:	480 g/mol
Physical Form (at time of use)	:	Solid, low dustiness
Remarks	:	Elevated temperature

Amount used

Daily amount per site	:	620 kg

Frequency and duration of use

Continuous exposure	:	1 uses per day
Continuous exposure	:	300 times per year

Environment factors not influenced by risk management

Flow rate of receiving surface water	:	18,000 m3/d

Technical conditions and measures / Organizational measures

Remarks	:	Ensure operatives are trained to minimise exposures. Ensure control measures are regularly inspected and maintained. To prevent leaks or spillages from spreading, provide a suitable liquid retention system. Sample via a closed loop or other system to avoid exposure.
Remarks	:	Loading Use in contained systems

Conditions and measures related to sewage treatment plant

Type of Sewage Treatment Plant	:	Onsite Sewage Treatment Plant
Flow rate of sewage treatment plant effluent	:	2,000 m3/d
Effectiveness (of a measure)	:	80 %
Sludge Treatment	:	No application of sewage sludge to soil

Waste management measures

Waste treatment	:	Incineration
Disposal methods	:	(Effectiveness (of a measure): > 99 %)
Remarks	:	No waste from process

1.2.2 ES 1 - CS 2: Control of worker exposure: Formulation or re-packing (Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions) (PROC1)

Product characteristics

Concentration of the Substance in Mixture/Article	:	<= 5 %
Molecular weight	:	480 g/mol
Physical Form (at time of use)	:	Solid, low dustiness
Remarks	:	Elevated temperature

Frequency and duration of use

Product sampling	:	< 1 min
Remarks	:	Closed systems, short-term, Continuous process

Human factors not influenced by risk management

Dermal exposure	:	Palm of one hand
Covers skin contact area up to	:	240 cm²
Remarks	:	Product sampling

Other operational conditions affecting workers exposure

Outdoor / Indoor	:	Indoor or outdoor use

Risk Management Measures

Type of Application (Use)	:	Product sampling
Exposure routes	:	dermal
Personal protective measures	:	Wear suitable gloves tested to EN374. Wear safety goggles. Wear suitable protective clothing.
Type of Application (Use)	:	Material transfers Indoor use
Exposure routes	:	inhalative
Technical conditions and measures	:	Local exhaust ventilation
Effectiveness (of a measure)	:	80 %
Type of Application (Use)	:	Equipment cleaning and maintenance
Exposure routes	:	inhalative
Personal protective measures	:	Wear suitable respiratory protection.
Effectiveness (of a measure)	:	90 %
Organisational measures to prevent /limit releases, dispersion and exposure	:	Ensure operatives are trained to minimise exposures. Ensure control measures are regularly inspected and maintained. Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed. Assumes a good basic standard of occupational hygiene is implemented
Technical conditions and measures	:	Handle substance within a closed system. Sample via a closed loop or other system to avoid exposure.
Technical conditions and measures	:	Remote filling / transfer devices Material transfers Transfer via enclosed lines.

1.2.3 ES 1 - CS 3: Control of worker exposure: Formulation or re-packing (Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions) (PROC2)

Product characteristics

Concentration of the Substance in Mixture/Article	:	<= 5 %
Physical Form (at time of use)	:	Solid, low dustiness
Remarks	:	Elevated temperature

Frequency and duration of use

Product sampling	:	< 1 min
Remarks	:	Closed systems, Continuous process

Human factors not influenced by risk management

Dermal exposure	:	Assumes that potential dermal contact is limited to inside hands / one hand / palm of hands.
Covers skin contact area up to	:	480 cm²
Remarks	:	Product sampling

Other operational conditions affecting workers exposure

Outdoor / Indoor	:	Indoor or outdoor use

Risk Management Measures

Type of Application (Use)	:	Product sampling
Exposure routes	:	dermal
Personal protective measures	:	Wear suitable gloves tested to EN374. Wear safety goggles. Wear suitable protective clothing.
Type of Application (Use)	:	Material transfers Indoor use
Exposure routes	:	inhalative
Technical conditions and measures	:	Local exhaust ventilation
Effectiveness (of a measure)	:	80 %
Type of Application (Use)	:	Equipment cleaning and maintenance
Exposure routes	:	inhalative
Personal protective measures	:	Wear suitable respiratory protection.
Effectiveness (of a measure)	:	90 %
Organisational measures to prevent /limit releases, dispersion and exposure	:	Ensure operatives are trained to minimise exposures. Ensure control measures are regularly inspected and maintained. Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed. Assumes a good basic standard of occupational hygiene is implemented
Technical conditions and	:	Handle substance within a closed system.

measures		Sample via a closed loop or other system to avoid exposure.
Technical conditions and measures	:	Remote filling / transfer devices Material transfers Transfer via enclosed lines.

1.2.4 ES 1 - CS 4: Control of worker exposure: Formulation or re-packing (Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition) (PROC3)

Product characteristics

Concentration of the Substance in Mixture/Article	:	<= 5 %
Physical Form (at time of use)	:	Solid, low dustiness
Remarks	:	Elevated temperature

Frequency and duration of use

Product sampling	:	< 1 min
Remarks	:	Closed systems, Batch process, short-term, Continuous process

Human factors not influenced by risk management

Dermal exposure	:	Palm of one hand
Covers skin contact area up to	:	240 cm²
Remarks	:	Product sampling

Other operational conditions affecting workers exposure

Outdoor / Indoor	:	Indoor or outdoor use

Risk Management Measures

Type of Application (Use)	:	Product sampling
Exposure routes	:	dermal
Personal protective measures	:	Wear suitable gloves tested to EN374. Wear safety goggles. Wear suitable protective clothing.
Type of Application (Use)	:	Material transfers Indoor use
Exposure routes	:	inhalative
Technical conditions and measures	:	Local exhaust ventilation
Effectiveness (of a measure)	:	80 %
Type of Application (Use)	:	Equipment cleaning and maintenance
Exposure routes	:	inhalative
Personal protective measures	:	Wear suitable respiratory protection.
Effectiveness (of a measure)	:	90 %
Organisational measures to prevent /limit releases, dispersion and exposure	:	Ensure operatives are trained to minimise exposures. Ensure control measures are regularly inspected and maintained.

		Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed. Assumes a good basic standard of occupational hygiene is implemented
Technical conditions and measures	:	Handle substance within a closed system. Sample via a closed loop or other system to avoid exposure.
Technical conditions and measures	:	Remote filling / transfer devices Material transfers Transfer via enclosed lines.

1.2.5 ES 1 - CS 5: Control of worker exposure: Formulation or re-packing (Mixing or blending in batch processes) (PROC5)

Product characteristics

Concentration of the Substance in Mixture/Article	:	<= 5 %
Physical Form (at time of use)	:	Solid, low dustiness
Remarks	:	Elevated temperature

Frequency and duration of use

Exposure duration	:	> 4 h
Product sampling	:	< 1 min
Frequency of use	:	1 uses per day
Frequency of use	:	350 times per year

Human factors not influenced by risk management

Dermal exposure	:	Assumes that potential dermal contact is limited to inside hands / one hand / palm of hands.
Covers skin contact area up to	:	480 cm²
Remarks	:	Product sampling

Other operational conditions affecting workers exposure

Outdoor / Indoor	:	Indoor or outdoor use

Risk Management Measures

Type of Application (Use)	:	Product sampling
Exposure routes	:	dermal
Personal protective measures	:	Wear suitable gloves tested to EN374. Wear safety goggles. Wear suitable protective clothing.
Type of Application (Use)	:	Material transfers Indoor use
Exposure routes	:	inhalative
Technical conditions and measures	:	Local exhaust ventilation
Effectiveness (of a measure)	:	80 %
Type of Application (Use)	:	Equipment cleaning and maintenance
Exposure routes	:	inhalative

Personal protective measures	:	Wear suitable respiratory protection.
Effectiveness (of a measure)	:	90 %
Organisational measures to prevent /limit releases, dispersion and exposure	:	Ensure operatives are trained to minimise exposures. Ensure control measures are regularly inspected and maintained. Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed. Assumes a good basic standard of occupational hygiene is implemented
Technical conditions and measures	:	Handle substance within a closed system. Sample via a closed loop or other system to avoid exposure.
Technical conditions and measures	:	Remote filling / transfer devices Material transfers Transfer via enclosed lines.

1.2.6 ES 1 - CS 6: Control of worker exposure: Formulation or re-packing (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Product characteristics

Concentration of the Substance in Mixture/Article	:	<= 5 %
Physical Form (at time of use)	:	Solid, low dustiness
Remarks	:	Elevated temperature

Frequency and duration of use

Exposure duration	:	> 4 h
Frequency of use	:	1 uses per day
Frequency of use	:	350 times per year

Human factors not influenced by risk management

Dermal exposure	:	Assumes that potential dermal contact is limited to hands.
Covers skin contact area up to	:	960 cm²
Remarks	:	Loading and unloading, Loading

Other operational conditions affecting workers exposure

Outdoor / Indoor	:	Indoor or outdoor use
Remarks	:	Loading and unloading, Loading, Material transfers

Risk Management Measures

Exposure routes	:	dermal
Personal protective measures	:	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Wear safety goggles. Wear suitable protective clothing.
Type of Application (Use)	:	Material transfers Indoor use
Exposure routes	:	inhalative
Technical conditions and	:	Local exhaust ventilation

measures		
Effectiveness (of a measure)	:	80 %
Organisational measures to prevent /limit releases, dispersion and exposure	:	Ensure operatives are trained to minimise exposures. Ensure control measures are regularly inspected and maintained. Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed. Assumes a good basic standard of occupational hygiene is implemented
Technical conditions and measures	:	Handle substance within a closed system. Sample via a closed loop or other system to avoid exposure.
Technical conditions and measures	:	Remote filling / transfer devices Material transfers Transfer via enclosed lines.

1.2.7 ES 1 - CS 7: Control of worker exposure: Formulation or re-packing (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Product characteristics

Concentration of the Substance in Mixture/Article	:	<= 100 %
Physical Form (at time of use)	:	Solid, low dustiness
Remarks	:	Elevated temperature

Frequency and duration of use

Exposure duration	:	<= 4 h
Frequency of use	:	1 uses per day
Frequency of use	:	350 times per year

Human factors not influenced by risk management

Dermal exposure	:	Assumes that potential dermal contact is limited to hands.
Covers skin contact area up to	:	960 cm²
Remarks	:	Loading and unloading, Loading

Other operational conditions affecting workers exposure

Outdoor / Indoor	:	Indoor or outdoor use
Remarks	:	Loading and unloading, Loading, Material transfers

Risk Management Measures

Exposure routes	:	dermal
Personal protective measures	:	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Wear safety goggles. Wear suitable protective clothing.
Type of Application (Use)	:	Material transfers Indoor use
Exposure routes	:	inhalative
Technical conditions and	:	Local exhaust ventilation

measures		
Effectiveness (of a measure)	:	80 %
Organisational measures to prevent /limit releases, dispersion and exposure	:	Ensure operatives are trained to minimise exposures. Ensure control measures are regularly inspected and maintained. Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed. Assumes a good basic standard of occupational hygiene is implemented
Technical conditions and measures	:	Handle substance within a closed system. Sample via a closed loop or other system to avoid exposure.
Technical conditions and measures	:	Remote filling / transfer devices Material transfers Transfer via enclosed lines.

1.2.8 ES 1 - CS 8: Control of worker exposure: Formulation or re-packing (Transfer of substance or mixture (charging/discharging) at dedicated facilities) (PROC8b)

Product characteristics

Concentration of the Substance in Mixture/Article	:	<= 5 %
Physical Form (at time of use)	:	Solid, low dustiness
Remarks	:	Elevated temperature

Frequency and duration of use

Exposure duration	:	> 4 h
Frequency of use	:	1 uses per day
Frequency of use	:	350 times per year

Human factors not influenced by risk management

Dermal exposure	:	Assumes that potential dermal contact is limited to hands.
Covers skin contact area up to	:	960 cm²
Remarks	:	Loading and unloading, Loading

Other operational conditions affecting workers exposure

Outdoor / Indoor	:	Indoor or outdoor use
Remarks	:	Loading and unloading, Loading, Material transfers

Risk Management Measures

Exposure routes	:	dermal
Personal protective measures	:	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Wear safety goggles. Wear suitable protective clothing.
Type of Application (Use)	:	Material transfers Indoor use
Exposure routes	:	inhalative
Technical conditions and	:	Local exhaust ventilation

measures		
Effectiveness (of a measure)	:	80 %
Organisational measures to prevent /limit releases, dispersion and exposure	:	Ensure operatives are trained to minimise exposures. Ensure control measures are regularly inspected and maintained. Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed. Assumes a good basic standard of occupational hygiene is implemented
Technical conditions and measures	:	Handle substance within a closed system. Sample via a closed loop or other system to avoid exposure.
Technical conditions and measures	:	Remote filling / transfer devices Material transfers Transfer via enclosed lines.

1.2.9 ES 1 - CS 9: Control of worker exposure: Formulation or re-packing (Transfer of substance or mixture (charging/discharging) at dedicated facilities) (PROC8b)

Product characteristics

Concentration of the Substance in Mixture/Article	:	<= 100 %
Physical Form (at time of use)	:	Solid, low dustiness
Remarks	:	Elevated temperature

Frequency and duration of use

Exposure duration	:	<= 4 h
Frequency of use	:	1 uses per day
Frequency of use	:	350 times per year

Human factors not influenced by risk management

Dermal exposure	:	Assumes that potential dermal contact is limited to hands.
Covers skin contact area up to	:	960 cm²
Remarks	:	Loading and unloading, Loading

Other operational conditions affecting workers exposure

Outdoor / Indoor	:	Indoor or outdoor use
Remarks	:	Loading and unloading, Loading, Material transfers

Risk Management Measures

Exposure routes	:	dermal
Personal protective measures	:	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Wear safety goggles. Wear suitable protective clothing.
Type of Application (Use)	:	Material transfers Indoor use
Exposure routes	:	inhalative
Technical conditions and	:	Local exhaust ventilation

measures		
Effectiveness (of a measure)	:	80 %
Organisational measures to prevent /limit releases, dispersion and exposure	:	Ensure operatives are trained to minimise exposures. Ensure control measures are regularly inspected and maintained. Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed. Assumes a good basic standard of occupational hygiene is implemented
Technical conditions and measures	:	Handle substance within a closed system. Sample via a closed loop or other system to avoid exposure.
Technical conditions and measures	:	Remote filling / transfer devices Material transfers Transfer via enclosed lines.

1.2.10 ES 1 - CS 10: Control of worker exposure: Formulation or re-packing (Transfer of substance or mixture into small containers (dedicated filling line, including weighing)) (PROC9)

Product characteristics

Concentration of the Substance in Mixture/Article	:	<= 5 %
Physical Form (at time of use)	:	Solid, low dustiness
Remarks	:	Elevated temperature

Frequency and duration of use

Exposure duration	:	> 4 h
Frequency of use	:	1 uses per day
Frequency of use	:	350 times per year

Human factors not influenced by risk management

Dermal exposure	:	Assumes that potential dermal contact is limited to inside hands / one hand / palm of hands.
Covers skin contact area up to	:	480 cm^2
Remarks	:	Loading and unloading, Loading

Other operational conditions affecting workers exposure

Outdoor / Indoor	:	Indoor or outdoor use
Remarks	:	Loading and unloading, Loading, Material transfers

Risk Management Measures

Exposure routes	:	dermal
Personal protective measures	:	Wear suitable gloves tested to EN374. Wear safety goggles. Wear suitable protective clothing.
Type of Application (Use)	:	Material transfers Indoor use
Exposure routes	:	inhalative

Technical conditions and measures	:	Local exhaust ventilation
Effectiveness (of a measure)	:	80 %
Organisational measures to prevent /limit releases, dispersion and exposure	:	Ensure operatives are trained to minimise exposures. Ensure control measures are regularly inspected and maintained. Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed. Assumes a good basic standard of occupational hygiene is implemented
Technical conditions and measures	:	Handle substance within a closed system. Sample via a closed loop or other system to avoid exposure.
Technical conditions and measures	:	Remote filling / transfer devices Material transfers Transfer via enclosed lines.

1.2.11 ES 1 - CS 11: Control of worker exposure: Formulation or re-packing (Transfer of substance or mixture into small containers (dedicated filling line, including weighing)) (PROC9)

Product characteristics

Concentration of the Substance in Mixture/Article	:	<= 100 %
Physical Form (at time of use)	:	Solid, low dustiness
Remarks	:	Elevated temperature

Frequency and duration of use

Exposure duration	:	<= 4 h
Frequency of use	:	1 uses per day
Frequency of use	:	350 times per year

Human factors not influenced by risk management

Dermal exposure	:	Assumes that potential dermal contact is limited to inside hands / one hand / palm of hands.
Covers skin contact area up to	:	480 cm²
Remarks	:	Loading and unloading, Loading

Other operational conditions affecting workers exposure

Outdoor / Indoor	:	Indoor or outdoor use
Remarks	:	Loading and unloading, Loading, Material transfers

Risk Management Measures

Exposure routes	:	dermal
Personal protective measures	:	Wear suitable gloves tested to EN374. Wear safety goggles. Wear suitable protective clothing.
Type of Application (Use)	:	Material transfers Indoor use

Exposure routes	:	inhalative
Technical conditions and measures	:	Local exhaust ventilation
Effectiveness (of a measure)	:	80 %
Organisational measures to prevent /limit releases, dispersion and exposure	:	Ensure operatives are trained to minimise exposures. Ensure control measures are regularly inspected and maintained. Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed. Assumes a good basic standard of occupational hygiene is implemented
Technical conditions and measures	:	Handle substance within a closed system. Sample via a closed loop or other system to avoid exposure.
Technical conditions and measures	:	Remote filling / transfer devices Material transfers Transfer via enclosed lines.

1.2.12 ES 1 - CS 12: Control of worker exposure: Formulation or re-packing (Use as laboratory reagent) (PROC15)

Product characteristics

Concentration of the Substance in Mixture/Article	:	<= 100 %
Physical Form (at time of use)	:	Solid, low dustiness
Remarks	:	Elevated temperature

Frequency and duration of use

Exposure duration	:	<= 4 h
Frequency of use	:	1 uses per day
Frequency of use	:	350 times per year

Human factors not influenced by risk management

Dermal exposure	:	Palm of one hand
Covers skin contact area up to	:	240 cm²

Other operational conditions affecting workers exposure

Outdoor / Indoor	:	Indoor or outdoor use

Risk Management Measures

Exposure routes	:	dermal
Personal protective measures	:	Wear suitable gloves tested to EN374. Wear safety goggles. Wear suitable protective clothing.
Type of Application (Use)	:	Material transfers Indoor use
Exposure routes	:	inhalative
Technical conditions and measures	:	Local exhaust ventilation

Effectiveness (of a measure)	:	80 %
Organisational measures to prevent /limit releases, dispersion and exposure	:	Ensure operatives are trained to minimise exposures. Ensure control measures are regularly inspected and maintained. Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed. Assumes a good basic standard of occupational hygiene is implemented
Technical conditions and measures	:	Handle substance within a closed system. Sample via a closed loop or other system to avoid exposure.
Technical conditions and measures	:	Remote filling / transfer devices Material transfers Transfer via enclosed lines.

1.3. ES 1 Exposure estimation and reference to its source

1.3.1 ES 1 - CS 1: Environmental release and exposure: Formulation or re-packing (Formulation into mixture) (ERC2)

Release route	Release rate	Release estimation method
Air	0 kg/day	EUSES v2.1
Waste	0 kg/day	EUSES v2.1
Water	1.24 kg/day	EUSES v2.1

protection target	Exposure estimation and reference to its source (EUSES v2.1)	RCR
Freshwater	1.00 µg/L	0.086
Freshwater sediment	21.0 µg/kg wet weight	0.077
Soil	86.0 µg/kg dry weight	0.086
Sewage treatment plant	6.2 µg/L	0.0144
Secondary poisoning	0.054 mg/kg bw/day (Only highest exposure levels are given.)	0.0081
Indirect exposure to humans via the environment	0.00015 mg/kg bw/day	< 0.01

1.3.2 ES 1 - CS 2: Worker exposure: Formulation or re-packing (Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions) (PROC1)

Route of exposure and type of effects	Exposure estimate	RCR
dermal	0.007 mg/kg bw/day (ECETOC TRA worker v3, Tier 1)	< 0.01
inhalative	0.002 mg/m³ (ECETOC TRA worker v3, Tier 1)	< 0.01
combined routes		< 1

1.3.3 ES 1 - CS 3: Worker exposure: Formulation or re-packing (Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions) (PROC2)

Route of exposure and type of effects	Exposure estimate	RCR
dermal	0.27 mg/kg bw/day (ECETOC TRA worker v3, Tier 1)	0.09
inhalative	0.002 mg/m³ (ECETOC TRA worker v3, Tier 1)	< 0.01
combined routes		< 1

1.3.4 ES 1 - CS 4: Worker exposure: Formulation or re-packing (Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition) (PROC3)

Route of exposure and type of effects	Exposure estimate	RCR
dermal	0.14 mg/kg bw/day (ECETOC TRA worker v3, Tier 1)	0.05
inhalative	0.02 mg/m³ (ECETOC TRA worker v3, Tier 1)	0.03
combined routes		< 1

1.3.5 ES 1 - CS 5: Worker exposure: Formulation or re-packing (Mixing or blending in batch processes) (PROC5)

Route of exposure and type of effects	Exposure estimate	RCR
dermal	0.54 mg/kg bw/day (ECETOC TRA worker v3, Tier 1)	0.18
inhalative	0.1 mg/m³ (ECETOC TRA worker v3, Tier 1)	0.17
combined routes		< 1

1.3.6 ES 1 - CS 6: Worker exposure: Formulation or re-packing (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Route of exposure and type of effects	Exposure estimate	RCR
dermal	0.54 mg/kg bw/day (ECETOC TRA worker v3, Tier 1)	0.18
inhalative	0.1 mg/m³ (ECETOC TRA worker v3, Tier 1)	0.17
combined routes		< 1

1.3.7 ES 1 - CS 7: Worker exposure: Formulation or re-packing (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Route of exposure and type of effects	Exposure estimate	RCR
dermal	0.82 mg/kg bw/day (ECETOC TRA worker v3, Tier 1)	0.27

inhalative	0.3 mg/m³ (ECETOC TRA worker v3, Tier 1)	0.5
combined routes		< 1

1.3.8 ES 1 - CS 8: Worker exposure: Formulation or re-packing (Transfer of substance or mixture (charging/discharging) at dedicated facilities) (PROC8b)

Route of exposure and type of effects	Exposure estimate	RCR
dermal	2.74 mg/kg bw/day (ECETOC TRA worker v3, Tier 1)	0.91
inhalative	0.02 mg/m³ (ECETOC TRA worker v3, Tier 1)	0.03
combined routes		< 1

1.3.9 ES 1 - CS 9: Worker exposure: Formulation or re-packing (Transfer of substance or mixture (charging/discharging) at dedicated facilities) (PROC8b)

Route of exposure and type of effects	Exposure estimate	RCR
dermal	1.37 mg/kg bw/day (ECETOC TRA worker v3, Tier 1)	0.46
inhalative	0.10 mg/m³ (ECETOC TRA worker v3, Tier 1)	0.17
combined routes		< 1

1.3.10 ES 1 - CS 10: Worker exposure: Formulation or re-packing (Transfer of substance or mixture into small containers (dedicated filling line, including weighing)) (PROC9)

Route of exposure and type of effects	Exposure estimate	RCR
dermal	1.37 mg/kg bw/day (ECETOC TRA worker v3, Tier 1)	0.46
inhalative	0.02 mg/m³ (ECETOC TRA worker v3, Tier 1)	0.03
combined routes		< 1

1.3.11 ES 1 - CS 11: Worker exposure: Formulation or re-packing (Transfer of substance or mixture into small containers (dedicated filling line, including weighing)) (PROC9)

Route of exposure and type of effects	Exposure estimate	RCR
dermal	1.37 mg/kg bw/day (ECETOC TRA worker v3, Tier 1)	0.46
inhalative	0.10 mg/m³ (ECETOC TRA worker v3, Tier 1)	0.17
combined routes		< 1

1.3.12 ES 1 - CS 12: Worker exposure: Formulation or re-packing (Use as laboratory reagent) (PROC15)

Route of exposure and type of effects	Exposure estimate	RCR
dermal	0.34 mg/kg bw/day (ECETOC TRA worker v3, Tier 1)	0.11
inhalative	0.10 mg/m³ (ECETOC TRA worker v3, Tier 1)	0.17
combined routes		< 1

1.4. ES 1 Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

No information available.

2. ES 2: Consumer use; Cosmetics, personal care products

2.1. Title section

Cosmetics, personal care products (PC39)		
Environment		
CS1:	Consumer use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor))	ERC8a
Consumer		
CS2:	Consumer use (Cosmetics, personal care products)	PC39

2.2. ES 2 Conditions of use affecting exposure

2.2.1 ES 2 - CS 1: Control of environmental exposure: Consumer use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)) (ERC8a)

Product characteristics

Concentration of the Substance in Mixture/Article : < 3 %

Physical Form (at time of use) : Liquid
Remarks : Covers use at ambient temperatures.

Amount used

Amounts used : 0.31 kg/day

Frequency and duration of use

Continuous exposure : 1 uses per day

Continuous exposure : 365 times per year

Environment factors not influenced by risk management

Flow rate of receiving surface water : 18,000 m3/d

Technical conditions and measures / Organizational measures
Remarks : Observe the usage / storage instructions.

Conditions and measures related to sewage treatment plant
Type of Sewage Treatment Plant : Municipal Sewage Treatment Plant
Flow rate of sewage treatment plant effluent : 2,000 m3/d

Waste management measures
Waste treatment : Incineration, Not applicable
Waste treatment : Landfill, Not applicable
Waste treatment : Recycling/recovery, Not applicable

2.2.2 ES 2 - CS 2: Control of consumer exposure: Consumer use (Cosmetics, personal care products) (PC39)

Remarks : No exposure assessment presented for human health.
In accordance to the Article 14 (5b) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation for human health does not need to be performed for end uses in cosmetic products within the scope of Directive 76/768/EEC.

2.3. ES 2 Exposure estimation and reference to its source

2.3.1 ES 2 - CS 1: Environmental release and exposure: Consumer use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)) (ERC8a)

Release route	Release rate	Release estimation method
Air	0 kg/day	EUSES v2.1
Waste	0 kg/day	EUSES v2.1
Water	0.31 kg/day	EUSES v2.1

protection target	Exposure estimation and reference to its source (EUSES v2.1)	RCR

Freshwater	0.66 µg/L	0.051
Freshwater sediment	56.0 µg/kg wet weight	0.045
Soil	21.4 µg/kg dry weight	0.021
Sewage treatment plant	1.6 µg/L	< 0.01
Secondary poisoning	0.04 mg/kg bw/day (Only highest exposure levels are given.)	< 0.01
Indirect exposure to humans via the environment	Not applicable, In accordance to the Article 14 (5b) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation for human health does not need to be performed for end uses in cosmetic products within the scope of Directive 76/768/EEC.	

2.4. ES 2 Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Observe the usage / storage instructions.