

Safety Data Sheet according to UK REACH Regulations SI 2020/1577

Revision date: 4/22/2021 Supercedes: 2/9/2021 (last EU SDS)

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

1.1. Product identifier:	
Product trade name: Company product number: UK REACH registration number: Substance name:	Kalama* Florosol S FLOROSOLS UK-01-8605947276-0-0003 A mixture of: cis-tetrahydro-2-isobutyl-4-methylpyran-4-ol; trans-tetrahydro-2- isobutyl-4-methylpyran-4-ol
Substance identification number:	EC 405-040-6
Other means of identification:	32202; 2H-Pyran-4-ol, tetrahydro-4-methyl-2-(2-methylpropyl)-
1.2. Relevant identified uses of the substance or	mixture and uses advised against:
Uses:	Fragrance ingredient. Industrial applications. Professional applications. Consumer applications. See Annex for covered uses.
Uses advised against:	Consumer products with potential for significant oral contact.
1.3. Details of the supplier of the safety data sheet	et:
Manufacturer/Supplier:	Emerald Kalama Chemical Limited Dans Road Widnes, Cheshire WA8 0RF United Kingdom Telephone: +44 (0) 151 423 8000
For further information about this SDS:	Email: product.compliance@emeraldmaterials.com
1.4. Emergency telephone number:	
	ChemTel (24 hours): 1-800-255-3924 (USA); +1-813-248-0585 (outside USA).

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture:

Product classification according to GB CLP as amended:

Eye Irritation, category 2, H319

See Section 2.2 for full text of H (Hazard) statements.

2.2. Label elements:

Product labeling according to GB CLP as amended: Hazard pictogram(s):



Signal word: Warning Hazard statements: H319 Causes serious eye irritation. Precautionary statements: P264 Wash skin thoroughly after handling. P280 Wear eye protection/face protection. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313 If eye irritation persists: Get medical advice/attention.

Supplemental information:

No Additional Information Precautionary statements are listed according to the United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS) - Annex III and GB CLP Guidance on Labelling and Packaging. Regulations in individual countries/regions may determine which statements are required on the product label. See product label for specifics.

PBT/vPvB criteria: Other hazards:

This product does not meet the PBT and vPvB classification criteria. No Additional Information

See Section 11 for toxicological information.

SECTION 3: Composition/information on ingredients

3.1. Substance:				
CAS-No.	<u>Chemical Name</u>	Weight%	<u>Classification</u>	H Statements
0063500-71-0	Tetrahydro-2-isobutyl-4- methylpyran-4-ol, mixed isomers (cis and trans)	98-100	Eye Irrit. 2	H319
CAS-No.	Chemical Name	Weight%	UK REACH Registration No.	EC/List Number
0063500-71-0	Tetrahydro-2-isobutyl-4- methylpyran-4-ol, mixed isomers (cis and trans)	98-100	UK-01-8605947276-0-0003	405-040-6

See Section 16 for full text of H (Hazard) statements.

Amounts specified are typical and do not represent a specification. Remaining components are proprietary, non-hazardous, and/or present at amounts below reportable limits.

SECTION 4: First aid measures

4.1. Description of first aid measures:

General: If irritation or other symptoms occur or persist from any route of exposure, remove the affected individual from the area: see a physician/get medical attention.

Eye contact: Immediately flush eyes with plenty of clean water for an extended time, not less than fifteen (15) minutes. Flush longer if there is any indication of residual chemical in the eye. Ensure adequate flushing of the eyes by separating the eyelids with fingers and roll eyes in a circular motion. If eye irritation persists: Get medical advice/attention.

Skin contact: Wash the affected area thoroughly with plenty of soap and water. Get medical attention if symptoms occur.

Inhalation: If affected, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Call a POISON CENTER or doctor/physician if you feel unwell.

Ingestion: Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse out the mouth with water. Get medical attention immediately.

Protection of first aid responders: Wear proper personal protective clothing and equipment.

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

Irritation. Pre-existing skin problems may be aggravated by prolonged or repeated contact. See section 11 for additional information.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media:

Suitable: Use water spray, ABC dry chemical, foam or carbon dioxide. Water or foam may cause frothing. Use water to keep fire-exposed containers cool. Water spray may be used to flush spills away from exposures.

Unsuitable: None known.

5.2. Special hazards arising from the substance or mixture:

Unusual fire/explosion hazards: Product is not considered a fire hazard, but will burn if ignited. Closed container may rupture (due to build up in pressure) when exposed to extreme heat.

Hazardous combustion products: Irritating or toxic substances may be emitted upon burning, combustion or decomposition. See section 10 (10.6 Hazardous decomposition products) for additional information.

5.3. Advice for firefighters:

Wear self-contained breathing apparatus (SCBA) equipped with a full facepiece and operated in a pressure-demand mode (or other positive pressure mode) and approved protective clothing. Personnel without suitable respiratory protection must leave the area to prevent significant exposure to hazardous gases from combustion, burning or decomposition. In an enclosed or poorly ventilated area, wear SCBA during cleanup immediately after a fire as well as during the attack phase of firefighting operations.

See section 9 for additional information.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures:

See Section 8 for recommendations on the use of personal protective equipment. If spilled in an enclosed area, ventilate. Eliminate ignition sources. Personal Protective Equipment must be worn.

6.2. Environmental precautions:

Do not flush liquid into public sewer, water systems or surface waters.

6.3. Methods and material for containment and cleaning up:

Contain by diking with sand, earth or other non-combustible material. Wear proper personal protective clothing and equipment. Absorb spill with an inert material. Place into labeled, closed container; store in safe location to await disposal. Change contaminated clothing and launder before reuse.

6.4. References to other sections:

See Section 8 for recommendations on the use of personal protection and Section 13 for waste disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling:

As with any chemical product, use good laboratory/workplace procedures. Do not cut, puncture, or weld on or near the container. Wash thoroughly after handling this product. Always wash up before eating, smoking or using the facilities. Use under well-ventilated conditions. Avoid eye contact. Avoid repeated or prolonged skin contact. Avoid inhalation of aerosol, mist, spray, fume or vapor. Avoid drinking, tasting, swallowing or ingesting this product. Wash contaminated clothing before reuse. Provide eyewash fountains and safety showers in the work area.

7.2. Conditions for safe storage, including any incompatibilities:

Store cool and dry, under well-ventilated conditions. Store this material away from incompatible substances (see section 10). Do not store in open, unlabeled or mislabeled containers. Keep container closed when not in use. Do not reuse empty container without commercial cleaning or reconditioning. Empty container contains residual product which may exhibit hazards of product.

7.3. Specific end use(s):

Further information concerning special risk management measures: see annex of this safety data sheet (exposure scenarios).

SECTION 8: Exposure controls / personal protection

8.1. Control parameters:

Occupational exposure limits (OEL):

Chemical Name	ACGIH - TWA/Ceiling	ACGIH - STEL
l etrahydro-2-isobutyl-4-methylpyran-4-ol, mixed	N/E	N/E
isomers (cis and trans)		
Chemical Name	UK WEL	
Tetrahydro-2-isobutyl-4-methylpyran-4-ol, mixed	N/E	
isomers (cis and trans)		

N/E=Not established (no exposure limits established for the listed substances for listed country/region/organization).

Derived No Effect Levels (DNELs):

Tetrahydro-2-isobutyl-4-methylpyran-4-ol, mixed isomers (cis and trans)

Population	Route	Acute (local)	Acute (systemic)	Long Term (local)	Long Term (systemic)
Workers	Inhalation	N/E	N/E	N/E	44,1 mg/m3
Workers	Dermal	N/E	N/E	N/E	41,7 mg/kg bw/day
General population	Inhalation	N/E	N/E	N/E	13 mg/m3
General population	Dermal	N/E	N/E	N/E	25 mg/kg bw/day
General population	Oral	N/E	N/E	N/E	7,5 mg/kg bw/day

Predicted No Effect Concentration (PNECs):

Tetrahydro-2-isobutyl-4-methylpyran-4-ol, mixed isomers (cis and trans)

Compartment	PNEC
Freshwater	0,094 mg/L
Freshwater sediment	0,412 mg/kg dw
Marine water	0,0094 mg/L
Marine water sediment	0,0412 mg/kg dw
Intermittent releases	0,94 mg/L
Soil	0,0902 mg/kg dw
STP	10 mg/L

Compartment	PNEC
Oral	No potential for bioaccumulation
N/E=Not established; N/A=Not applicable	le (not required); bw=body weight; dw=dry weight; ww=wet weight.

8.2. Exposure controls:

Appropriate engineering controls: Always provide effective general and, when necessary, local exhaust ventilation to draw spray, aerosol, fume, mist and vapor away from workers to prevent routine inhalation. Ventilation must be adequate to maintain the ambient workplace atmosphere below the exposure limit(s) outlined in the SDS.

Individual protection measures, such as personal protective equipment:

Eye/face protection: Safety glasses or goggles required.

Hand protection: Avoid skin contact when mixing or handling the material by wearing impervious and chemical resistant gloves. In case of prolonged immersion or frequently repeated contact, gloves with breakthrough times greater than 240 minutes (protection class 5 or greater) are recommended. For brief contact or splash applications, gloves with breakthrough times of 10 minutes or greater are recommended (protection class 1 or greater). The protective gloves to be used must comply with the specifications of the standard EN 374. Suitability and durability of a glove is dependent on usage (e.g. frequency and duration of contact, other chemicals which may be handled, chemical resistance of glove material and dexterity). Always seek advice of the glove supplier as to the most suitable glove material.

Skin and body protection: Use good laboratory/workplace procedures including personal protective clothing: labcoat, safety glasses and protective gloves.

Respiratory protection: Respiratory protection is not needed with proper ventilation. In case of insufficient ventilation, wear suitable respiratory equipment.

Further information: Eyewash fountains and safety showers are recommended in the work area.

Environmental exposure controls: See Sections 6 and 12.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties:

Appearance:	Liquid. Colorless to light yellow
Odour:	Floral
Odour threshold:	Not Available
pH:	Not Available
Melting point/Freezing point:	<-100°C (<-148°F)
Initial boiling point and boiling range °C:	227 °C
Initial boiling point and boiling range °F:	440 °F
Flash point:	106 °C (223 °F) Closed Cup
Evaporation rate:	Not Available
Flammability (solid, gas):	Not Applicable (liquid)
Upper/lower flammability or explosive limits:	LFL/LEL: Not Available
	UFL/UEL: Not Available
Vapour pressure:	1 Pa @ 20°C
Vapour density:	Not Available
Relative density:	0.943-0.953
Solubility in water:	23-24 g/L @ 23°C
Partition coefficient (n-octanol/water):	1.65 (23°C)
Autoignition temperature:	328°C (622°F)
Decomposition temperature:	Not Available
Viscosity:	234 mPa.s (20°C)
Explosive properties:	Not explosive
Oxidising properties:	Not oxidizing
% Volatile By weight:	Not Available
VOC:	Not Available

9.2. Other information:

Amounts specified are typical and do not represent a specification.

SECTION 10: Stability and reactivity

10.1. Reactivity:

None known.

10.2. Chemical stability:

This product is stable.

SDS Name: Kalama* Florosol S

10.3. Possibility of hazardous reactions:

Hazardous polymerization will not occur.

10.4. Conditions to avoid:

Excessive heat and ignition sources.

10.5. Incompatible materials:

Avoid contact with strong oxidizing agents.

10.6. Hazardous decomposition products:

Carbon dioxide, carbon monoxide and hydrocarbons.

SECTION 11: Toxicological information

11.1. Information on toxicological effects:

Information on likely routes of exposure:

General: Caution must be exercised through the prudent use of protective equipment and handling procedures to minimize exposure.

Eyes: Causes serious eye irritation.

Skin: Repeated or prolonged skin contact may cause irritation.

Inhalation: High airborne concentrations of vapors resulting from heating, misting or spraying may cause irritation of the respiratory tract and mucous membranes.

Ingestion: Ingestion may cause irritation.

Acute toxicity information: Not classified (based on available data, the classification criteria are not met).

Chemical Name	Inhalation LC50	Species	Oral LD50	Species	Dermal LD50	Species
Tetrahydro-2-isobutyl-4-methylpyran-4-	N/E	N/E	>2000 mg/kg	Rat/ adult	>2000 mg/kg	Rabbit/ adult
ol, mixed isomers (cis and trans)						

Skin corrosion/irritation: Not classified (based on available data, the classification criteria are not met).

Chemical Name	Skin irritation	Species
Tetrahydro-2-isobutyl-4-methylpyran-4-	Mild irritant	Rabbit/ adult
ol, mixed isomers (cis and trans)		

Serious eye damage/irritation: Causes serious eye irritation - Category 2.

Chemical Name	Eye irritation	Species
Tetrahydro-2-isobutyl-4-methylpyran-4-	Irritant	Rabbit/ adult
ol, mixed isomers (cis and trans)		

Respiratory or skin sensitization: Not classified (based on available data, the classification criteria are not met).

Chemical Name	Skin sensitisation	Species
Tetrahydro-2-isobutyl-4-methylpyran-4-	Non-sensitizer	Guinea Pig/ adult
ol, mixed isomers (cis and trans)		

Carcinogenicity: Not classified (no relevant information found).

Germ cell mutagenicity: Not classified (based on available data, the classification criteria are not met). TETRAHYDRO-2-ISOBUTYL-4-METHYLPYRAN-4-OL, MIXED ISOMERS (cis and trans): Mutagenic assays were negative for both in vivo and in vitro assays.

Reproductive toxicity: Not classified (based on available data, the classification criteria are not met). TETRAHYDRO-2-ISOBUTYL-4-METHYLPYRAN-4-OL, MIXED ISOMERS (cis and trans): Reproductive toxicity, oral, rats: NOAEL (no-observed adverse-effect-level) 1113 mg/kg bw/day (OECD 443). Reproductive toxicity, dermal, rats: NOAEL (no-observed adverseeffect-level) 1000 mg/kg bw/day (OECD 414). Developmental toxicity, oral, rats: NOAEL of 1113 mg/kg bw/day (OECD 443). Developmental toxicity dermal, rats: NOAEL (no-observed-adverse-effect level), maternal toxicity=1000 mg/kg bw/day; NOAEL, developmental toxicity=1000 mg/kg bw/day (OECD 414).

Specific target organ toxicity (STOT) - single exposure: Not classified (based on available data, the classification criteria are not met).

Specific target organ toxicity (STOT) - repeated exposure: Not classified (based on available data, the classification criteria are not met). TETRAHYDRO-2-ISOBUTYL-4-METHYLPYRAN-4-OL, MIXED ISOMERS (cis and trans): Repeated dose toxicity study: NOAEL (No-Observed-Adverse-Effect-Level), oral, rat - 125 mg/kg bw/day; NOAEL, dermal, rat - 1000 mg/kg bw/day.

Aspiration hazard: Not classified (based on available data, the classification criteria are not met).

Other toxicity information: No additional information available.

SECTION 12: Ecological information

12.1. Toxicity:

	Chemical Name	Species		Acute	Acute		Chronic	
	Tetrahydro-2-isobutyl-4- methylpyran-4-ol, mixed isomers (cis and trans)	Fish		LC50 354 mg/L (96 hours)	N/E		N/E	
	Tetrahydro-2-isobutyl-4- methylpyran-4-ol, mixed isomers (cis and trans)	Invertebrates		EC50 320 mg/L (48 hours)	N/E		N/E	
	Tetrahydro-2-isobutyl-4- methylpyran-4-ol, mixed isomers (cis and trans)	Algae		EC50 >100 mg/L (72 hours)	EC50 >1000 mg/L(72 hours)		EC10 232 mg/L(72 hours)	
	Tetrahydro-2-isobutyl-4- methylpyran-4-ol, mixed isomers (cis and trans)	Micro-organis	ms	EC50 >1000 mg/L (3 hours)				
12.2.	Persistence and degradability	y :						
	Chemical Name Biodegradation Tetrahydro-2-isobutyl-4-methylpyran-4-ol, mixed Inherently biodegradable (OECD 301D) isomers (cis and trans) Inherently biodegradable (OECD 301D)							
12.3.	Bioaccumulative potential:							
	Chemical Name Tetrahydro-2-isobutyl-4-methylpyran-4- isomers (cis and trans)	ol, mixed	Biocor N/E	ncentration Factor (BCF)		Log 1.65	∣ Kow 5 (23°C)	
12.4.	12.4. Mobility in soil:							
	Chemical Name Tetrahydro-2-isobutyl-4-methylpyran-4- isomers (cis and trans)	ol, mixed	<u>Mobili</u> 25 (OE	ty in soil (Koc/Kow) ECD 121)				
12.5.	Results of PBT and vPvB ass	sessment:						

This product does not meet the PBT and vPvB classification criteria.

12.6. Other adverse effects:

No additional information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods:

Dispose of unused contents (incineration) in accordance with national and local regulations. Dispose of container in accordance with national and local regulations. Ensure the use of properly authorized waste management companies, where appropriate.

See Section 8 for recommendations on the use of personal protective equipment.

SECTION 14: Transport information

The information below is provided to assist in documentation. It may supplement the information on the package. The package in your possession may carry a different version of the label depending on the date of manufacture. Depending on inner packaging quantities and packaging instructions, it may be subject to specific regulatory exceptions.

14.1. UN number: N/A

14.2. UN proper shipping name:

Not regulated - See Bill of Lading for Details

14.3. Transport hazard class(es):

U.S. DOT hazard class: N/A Canada TDG hazard class: N/A Europe ADR/RID hazard class: N/A IMDG Code (ocean) hazard class: N/A ICAO/IATA (air) hazard class: N/A

A "N/A" listing for the hazard class indicates the product is not regulated for transport by that regulation.

14.4. Packing group: N/A

14.5. Environmental hazards:

Marine pollutant: Not Applicable Hazardous substance (USA): Not Applicable

14.6. Special precautions for user:

Not Applicable

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code: Not Applicable

SECTION 15: Regulatory information

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

STATUTORY INSTRUMENTS 2020 No. 1577, The REACH etc. (Amendment etc.) (EU Exit) Regulations 2020 [UK REACH]: Applicable components have been registered, are exempt or otherwise compliant. UK REACH is only relevant to substances either manufactured or imported into the UK. Emerald Performance Materials has met its obligations under the UK REACH regulation. UK REACH information regarding this product is provided for informational purposes only. Each Legal Entity may have differing UK REACH obligations, depending on their place in the supply chain. For material manufactured outside of the UK, the importer of record must understand and meet their specific obligations under the regulation.

UK Authorizations and/or restrictions on use: Not Applicable

Other UK information: No Additional Information

Chemical inventories:	
Regulation	Status
Australian Inventory of Industrial Chemicals (AIIC):	Y
Canadian Domestic Substances List (DSL):	Y
Canadian Non-Domestic Substances List (NDSL):	N
China Inventory of Existing Chemical Substances (IECSC):	Y
European EC Inventory (EINECS, ELINCS, NLP):	Y
Japan Existing and New Chemical Substances (ENCS):	Y
Japan Industrial Safety and Health Law (ISHL):	Y
Korean Existing and Evaluated Chemical Substances (KECL):	Y
New Zealand Inventory of Chemicals (NZIoC):	Y
Philippines Inventory of Chemicals and Chemical Substances (PICCS):	Y
Taiwan Inventory of Existing Chemicals:	Y
U.S. Toxic Substances Control Act (TSCA) (Active):	Y
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A "Y" listing indicates all intentionally added components are either listed or are otherwise compliant with the regulation. A "N" listing indicates that for one or more components: 1) there is no listing on the public inventory (or is not on the ACTIVE inventory for U.S. TSCA); 2) no information is available; or 3) the component has not been reviewed. A "Y" for New Zealand may mean that a qualified group standard may exist for the components in this product.

Europe REACH (EC) 1907/2006: Applicable components are registered, exempt or otherwise compliant. EU REACH is only relevant to substances either manufactured or imported into the EU. Emerald Performance Materials has met its obligations under the EU REACH regulation. EU REACH information regarding this product is provided for informational purposes only. Each Legal Entity may have differing EU REACH obligations, depending on their place in the supply chain. For material manufactured outside of the EU, the importer of record must understand and meet their specific obligations under the regulation.

15.2. Chemical safety assessment:

A chemical safety assessment has been carried out for the substance or mixture consistent with the EU REACH regulation.

SECTION 16: Other information

Hazard (H) Statements in the Composition section (Section 3):H319Causes serious eye irritation.

Reason for revision: Changes in Section(s): 1, 8, 11, 12, Annex, Safety data sheet format (UK REACH Regulations SI 2020/1577)

Evaulation method For classification Of mixtures: Not Applicable (substance)

Legend:

* : Trademark owned by Emerald Performance Materials, LLC. ACGIH: American Conference of Governmental Industrial Hygienists ATE: Acute toxicity estimate N/A: Not Applicable N/E: None Established STEL: Short Term Exposure Limit TWA: Time Weighted Average (exposure for 8-hour workday) UK WEL: United Kingdom Workplace Exposure Limits

Users Responsibility/Disclaimer of Liability:

The information set forth herein is based on our current knowledge, and is intended to describe the product solely with respect to health, safety and the environment. As such, it must not be interpreted as a guarantee of any specific property of the product. As a result, the customer shall be solely responsible for deciding whether said information is suitable and beneficial.

Safety Data Sheet Preparer: Product Compliance Department Emerald Performance Materials, LLC 1499 SE Tech Center Place, Suite 300 Vancouver, WA 98683 United States

Annex

Exposure Scenarios

Substance information:

Name of substance: 2H-Pyran-4-ol, tetrahydro-4-methyl-2-(2-methylpropyl)-. EC# 405-040-6 / CAS# 63500-71-0 UK REACH Registration number: UK-01-8605947276-0-0003 EU REACH Registration number: 01-0000015458-64-0004

List of exposure scenarios:

ES1: Compounding

ES2: Formulation.

ES3: Use at industrial sites - Industrial use of washing and cleaning products

ES4: Use at industrial sites - Use as an intermediate (under strictly controlled conditions)

ES5: Use by professional workers - Professional use in polishes, wax blends, washing and cleaning products

ES6: Consumer use - Consumer use in polishes, wax blends, washing and cleaning products

ES7: Consumer use - Consumer end-use of air care products

ES8: Consumer use - Consumer end-use of cosmetics

ES9: Consumer use - Consumer end-use of biocides

General remarks:

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterization was performed. The first tier worker exposure assessments have at first instance been performed using EasyTRA 4.4.0 and ECETOC TRA version 3.0 (ECETOC TRA v3). For all consumer contributing scenarios second tier consumer exposure assessments have been performed using ConsExpo v4.1.

Exposure scenario (1): Compounding

1. Exposure scenario (1)

Short title of the exposure scenario:

Compounding

List of use descriptors:

Process category (PROC): PROC1, PROC3, PROC5, PROC8a, PROC8b, PROC9, PROC15

Environmental release category (ERC): ERC2

List of names of contributing worker scenarios and corresponding PROCs:

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions. PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition.

PROC5 Mixing or blending in batch processes. Covers mixing or blending of solid or liquid materials in the context of manufacturing or formulating sectors, as well as upon end use.

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities. Transfer includes loading, filling, dumping, bagging and weighing.

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities. Transfer includes loading, filling, dumping, bagging. PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing). Filling lines specifically designed to both capture vapour and aerosol emissions and minimise spillage.

PROC15 Use as laboratory reagent. Use of substances at small scale laboratory (< 1 l or 1 kg present at workplace).

Name of contributing environmental scenario and corresponding ERCs:

ERC2 Formulation into mixture.

For further information on standardized use descriptors see the European Chemical Agency (ECHA) Guidance on information requirements and chemical safety assessment, Chapter R.12: Use descriptor system (http://guidance.echa.europa.eu/docs/guidance_document/ information_requirements_r12_en.pdf).

2. Conditions of use affecting exposure

2.1 Control of workers exposure

General:

Generally accepted standards of occupational hygiene are maintained. Smoking, eating and drinking are prohibited at the workplace. Spills are cleaned immediately. Wear chemical resistant gloves in combination with basic employee training. Avoid contact with eyes.

Product characteristics:

Concentration of substance:

- PROC8a, PROC9: Up to 25% (a linear concentration reduction approach is used).

- PROC3, PROC5: Up to 25%.

- PROC1, PROC8b, PROC15: Up to 100%.

Physical state: liquid.

Vapour pressure:1 Pa.

Fugacity: Low.

Frequency and duration of use/exposure: Duration: 5 days/week

SDS Name: Kalama* Florosol S
- PROC3, PROC5, PROC8a: 1-4 hours/day. - PROC1, PROC8b, PROC9: 15 minutes-1 hour/day. - PROC15: <15 minutes/day.
Human factors not influenced by risk management:
Exposed skin surface:
- PROC1, PROC3, PROC15: 240 cm2 (one hand, face side only).
- PROC5, PROC9: 480 cm2 (two hands, face side only).
- PROC8a, PROC8b: 960 cm2 (two hands).
Other given operational conditions affecting workers exposure:
Location: Indoor use.
Domain: Industrial use.
Technical conditions and measures to control dispersion from source towards the worker:
General ventilation:
- PROC1, PROC3, PROC5, PROC8b, PROC9, PROC15: Basic general ventilation (1-3 air changes per hour): 0%.
- PROC8a: Enhanced general ventilation (5-10 air changes per hour): 70%.
Containment:
- PROCI: Closed system (minimal contact during routine operations).
- PROC3: Closed batch process with occasional controlled exposure.
- PROC53, PROC88, PROC9, PROC15: No.
Local exhaust ventilation:
- PROC1, PROC63, PROC65, PROC 15: Not required.
- PROC2, PROC2. Tes (90% ellectivelless).
- FROCAD. Tes (50 % effectivelies). Occupational Health and Safety Management System: Advanced
Conditione and meaning relative management dystem. Auvanced.
Conditions and measures related to personal protection, myglene and nearth evaluation.
Dermal protection: Not required.
- PROC1 PROC3 PROC3 PROC3 PROC3 PROC3 PROC3 PROC1 PROC1 PROC3 PROC
Gloves APE 10 (minimum efficiency dermal: 90%)
- PROC5: Yes (chemically resistant gloves conforming to FN374 with specific activity training). Gloves APE 20 (minimum efficiency dermal: 95%)
Additional good practice advice:

Additional good practice advice:

Generally accepted standards of occupational hygiene are maintained.

Minimisation of manual phases/work tasks.

Minimisation of splashes and spills.

Avoidance of contact with contaminated tools and objects.

Regular cleaning of equipment and work area.

Training staff on good practice.

Management/supervision in place to check that RMMs in place are being used correctly and OCs followed.

2.2 Control of environmental exposure

General:

As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.

3. Exposure estimation and reference to its source

Assessment method-Health: EasyTRA 4.4.0 and ECETOC TRA Worker v3. Only highest figures are presented here.

Health

Effect/Compartment	Exposure estimate/PEC	RCR	Notes
Worker, long-term, systemic, Dermal	1,371 mg/kg bw/day	0,032888	PROC8b
Worker, long-term, systemic, Inhalation	3,589 mg/m3	0,081381	PROC15
Worker, long-term, systemic, Combined routes	0,546988 mg/kg bw/day	0,082204	PROC15
PCP-Dick characterization ratio (DEC/DNEC or Ex	nosuro ostimato/DNEL): DEC-Dr	odicted environm	antal concontration

RCR=Risk characterization ratio (PEC/PNEC or Exposure estimate/DNEL); PEC=Predicted environmental concentration.

4. Guidance to the Downstream User to evaluate whether he works inside the boundaries set by the ES Health:

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Duration: 5 days/week. PROC3, PROC5, PROC8a: 1-4 hours/day. PROC1, PROC8b, PROC9: 15 minutes-1 hour/day. PROC15: <15 minutes. Dermal protection: Yes (chemically resistant gloves conforming to EN374 with basic employee training). PROC1, PROC3, PROC8a, PROC8b, PROC9, PROC15: Gloves APF 10 (minimum efficiency dermal: 90%). PROC5: Gloves APF 20 (minimum efficiency dermal: 95%). Concentration of substance: PROC8a, PROC9: Up to 25% (a linear concentration reduction approach is used). PROC3, PROC5: Up to 25%. PROC1, PROC8b, PROC15: Up to 100%

Exposure scenario (2): Formulation

1. Exposure scenario (2)

Short title of the exposure scenario:

Formulation

List of use descriptors:

Process category (PROC): PROC1, PROC3, PROC5, PROC8a, PROC8b, PROC9, PROC14, PROC15

Environmental release category (ERC): ERC2

List of names of contributing worker scenarios and corresponding PROCs:

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition.

PROC5 Mixing or blending in batch processes. Covers mixing or blending of solid or liquid materials in the context of manufacturing or formulating sectors, as well as upon end use.

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities. Transfer includes loading, filling, dumping, bagging and weighing.

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities. Transfer includes loading, filling, dumping, bagging. PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing). Filling lines specifically designed to both capture vapour and aerosol emissions and minimise spillage.

PROC14 Tabletting, compression, extrusion, pelletisation, granulation. This covers processing of mixtures and/or substances into a defined shape for further use.

PROC15 Use as laboratory reagent. Use of substances at small scale laboratory (< 1 l or 1 kg present at workplace).

Name of contributing environmental scenario and corresponding ERCs:

ERC2 Formulation into mixture.

Further explanations:

Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tabletting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.

For further information on standardized use descriptors see the European Chemical Agency (ECHA) Guidance on information requirements and chemical safety assessment, Chapter R.12: Use descriptor system (http://guidance.echa.europa.eu/docs/guidance_document/ information requirements r12 en.pdf).

2. Conditions of use affecting exposure

2.1 Control of workers exposure

General:

Generally accepted standards of occupational hygiene are maintained. Smoking, eating and drinking are prohibited at the workplace. Spills are cleaned immediately. Wear chemical resistant gloves in combination with basic employee training. Avoid contact with eyes.

PROC8a, PROC9, PROC14: In accordance to the Article 14 (2a-f) of the REACH Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the substance in a preparation is less than 1%.

Product characteristics:

Concentration of substance:

- PROC1, PROC3, PROC5, PROC8b, PROC15: Up to 25% (a linear concentration reduction approach is used).
- PROC8a, PROC9, PROC14: Up to 1%.

Physical state: liquid.

Vapour pressure:1 Pa.

Fugacity: Low.

Frequency and duration of use/exposure:

Duration: 5 days/week

- PROC3, PROC5: 1-4 hours/day.

- PROC1, PROC8b: 15 minutes-1 hour/day.

- PROC15: <15 minutes/day.

Human factors not influenced by risk management:

Exposed skin surface:

- PROC1, PROC3, PROC15: 240 cm2 (one hand, face side only).

- PROC5: 480 cm2 (two hands, face side only).

- PROC8b: 960 cm2 (two hands).

Other given operational conditions affecting workers exposure:

Location: Indoor use.

Domain: Industrial use

Technical conditions and measures to control dispersion from source towards the worker:

General ventilation: Basic general ventilation (1-3 air changes per hour): 0%.

Containment:

- PROC1: Closed system (minimal contact during routine operations).

- PROC3: Closed batch process with occasional controlled exposure.

- PROC5, PROC8b, PROC15: No.

Local exhaust ventilation: Not required.

Occupational Health and Safety Management System: Advanced.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: Not required.

Dermal protection: Yes (chemically resistant gloves conforming to EN374 with basic employee training), Gloves APF 10 (minimum efficiency dermal: 90%).

Additional good practice advice:

Generally accepted standards of occupational hygiene are maintained.

Minimisation of manual phases/work tasks.

Minimisation of splashes and spills.

Avoidance of contact with contaminated tools and objects.

Regular cleaning of equipment and work area.

Training staff on good practice.

Management/supervision in place to check that RMMs in place are being used correctly and OCs followed.

2.2 Control of environmental exposure

General:

As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.

3. Exposure estimation and reference to its source

Assessment method-Health: EasyTRA 4.4.0 and ECETOC TRA Worker v3. Only highest figures are presented here.

Health	,		
Effect/Compartment	Exposure estimate/PEC	RCR	<u>Notes</u>
Worker, long-term, systemic, Dermal	0,342857 mg/kg bw/day	0,008222	PROC5, PROC8b
Worker, long-term, systemic, Inhalation	5,383 mg/m3	0,122072	PROC5
Worker, long-term, systemic, Combined routes	1.112 mg/kg bw/day	0.130294	PROC5
RCR=Risk characterization ratio (PEC/PNEC or Exp	posure estimate/DNEL); PEC=F	Predicted environm	nental concentration.
A Guidance to the Downstream User to evaluate w	bether he works inside the ho	undaries set by th	e FS
Health: Predicted exposures are	not expected to exceed the DN	(M)EL when the Ri	sk Management Measures/Operational
Conditions outlined in Ser are adopted, then users s PROC3, PROC5: 1-4 hou protection: Yes (chemical (minimum efficiency derm 25% (a linear concentration	ction 2 are implemented. Where hould ensure that risks are mar irs/day. PROC1, PROC8b: 15 r ly resistant gloves conforming t hal: 90%). Concentration of sub on reduction approach is used).	e other Risk Manage aged to at least e ninutes-1 hour/day o EN374 with basi ostance: PROC1, PROC8a, PROC	gement Measures/Operational Conditions quivalent levels. Duration: 5 days/week. /. PROC15: <15 minutes. Dermal ic employee training). Gloves APF 10 PROC3, PROC5, PROC8b, PROC15: Up to 9, PROC14: Up to 1%.
Exposure scenario (3): Use at industrial sites -	Industrial use of washing ar	nd cleaning prod	ucts
1. Exposure scenario (3)			
Short title of the exposure scenario: Use at industrial sites - Industrial use of washing and	d cleaning products		
List of use descriptors:			
Product category (PC): PC35			
Environmental release category (ERC): FROC2, FROC	4, PROC7, PROC80, PROC10	, PROCIS	
List of names of contributing worker scenarios and	corresponding PROCs:		
PROC1 Chemical production or refinery in closed pu PROC2 Chemical production or refinery in closed or	rocess without likelihood of expontinuous process with occasion	osure or processe nal controlled expo	s with equivalent containment conditions. osure or processes with equivalent
containment conditions.			
PROC4 Chemical production where opportunity for	exposure arises.		
PROC7 Industrial spraying. Air dispersive technique	es i.e. dispersion into air (= aton	nization) by e.g. pr	essurized air, hydraulic pressure or
PROC8b Transfer of substance or mixture (charging	and discharging) at dedicated	facilities. Transfer	includes loading, filling, dumping, bagging
PROC10 Roller application or brushing. This include	es application of paints, coating	s, removers, adhe	sives or cleaning agents to surfaces with
potential exposure arising from splashes.			
PROC13 Treatment of articles by dipping and pouring	ng.		
Name of contributing environmental scenario and ERC4 Use of non-reactive processing aid at industri	corresponding ERCs: al site (no inclusion into or onto	article).	
Further explanations:	× ×	,	
PC35 Washing and cleaning products.			
For further information on standardized use descript	ors see the European Chemica	I Agency (ECHA)	Guidance on information requirements and
chemical safety assessment, Chapter R.12: Use des	scriptor system (http://guidance	.echa.europa.eu/d	ocs/guidance_document/
Conditions of use offecting exposure			
2.1 Control of workers exposure			
General:			
In accordance to the Article 14 (2a-f) of the REACH	Regulation (EC) No 1907/2006	, exposure estimat	ion and risk characterisation does not need
to be performed if the substance in a preparation is	ess than 1%.	-	
Product characteristics:			
Concentration of substance: Up to 1%.			
2.2 Control of environmental exposure			
General: As no onvironmental bazard was identified no onviro	annontal related exposure asso	econont and rick o	haractorization was performed
As no environmental nazard was identified no enviro			haracterization was performed.
3. Exposure estimation and reference to its source			
Effect/Compartment	Exposure estimate/PEC	<u>RCR</u>	Notes
Not Applicable In accordance to the Article 14 (2a-f) of the REACH to be performed if the substance in a preparation is I	Regulation (EC) No 1907/2006 ess than 1%.	, exposure estimat	ion and risk characterisation does not need
4. Guidance to the Downstream User to evaluate w	hether he works inside the bo	undaries set by th	e ES
Health: Concentration of substan	ce: Up to 1%.	•	
Exposure scenario (4): Use at industrial sites -	Use as an intermediate (und	der strictly contro	olled conditions)
1. Exposure scenario (4)	· · · · · · · · · · · · · · · · · · ·	······································	
Short title of the exposure scenario:			

Use at industrial sites - Use as an intermediate (under strictly controlled conditions)

List of use descriptors:

Process category (PROC): PROC1, PROC2, PROC3, PROC8b, PROC15

Environmental release category (ERC): ERC6a

List of names of contributing worker scenarios and corresponding PROCs:

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions. PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions.

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition.

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities. Transfer includes loading, filling, dumping, bagging. PROC15 Use as laboratory reagent. Use of substances at small scale in laboratories (less than or equal to 1 l or 1 kg present at workplace).

Name of contributing environmental scenario and corresponding ERCs:

ERC6a Use of intermediate.

For further information on standardized use descriptors see the European Chemical Agency (ECHA) Guidance on information requirements and chemical safety assessment, Chapter R.12: Use descriptor system (http://guidance.echa.europa.eu/docs/guidance_document/ information_requirements_r12_en.pdf).

2. Conditions of use affecting exposure

2.1 Control of workers exposure

General:

Intermediate under strictly controlled conditions - exposure estimation and risk characterisation does not need to be performed.

2.2 Control of environmental exposure

General:

As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.

3. Exposure estimation and reference to its source

Exposure estimate/PEC RCR

<u>Notes</u>

Not Applicable

Effect/Compartment

RCR=Risk characterization ratio (PEC/PNEC or Exposure estimate/DNEL); PEC=Predicted environmental concentration.

4. Guidance to the Downstream User to evaluate whether he works inside the boundaries set by the ES

Health: Use as an intermediate (under strictly controlled conditions).

Exposure scenario (5): Use by professional workers - Professional use in polishes, wax blends, washing and cleaning products 1. Exposure scenario (5)

Short title of the exposure scenario:

Use by professional workers - Professional use in polishes, was blends, washing and cleaning products

List of use descriptors:

Product category (PC): PC31, PC35 Process category (PROC): PROC1, PROC2, PROC4, PROC8a, PROC8b, PROC10, PROC11, PROC13

Environmental release category (ERC): ERC8a, ERC8d

List of names of contributing worker scenarios and corresponding PROCs:

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions. PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions.

PROC4 Chemical production where opportunity for exposure arises.

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities. Transfer includes loading, filling, dumping, bagging and weighing.

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities. Transfer includes loading, filling, dumping, bagging. PROC10 Roller application or brushing. This includes application of paints, coatings, removers, adhesives or cleaning agents to surfaces with potential exposure arising from splashes.

PROC11 Non industrial spraying. Air dispersive techniques i.e. dispersion into air (= atomization) by e.g. pressurized air, hydraulic pressure or centrifugation, applicable for liquids and powders.

PROC13 Treatment of articles by dipping and pouring.

Name of contributing environmental scenario and corresponding ERCs:

ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor).

ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor).

Further explanations:

PC31: Polishes and wax blends.

PC35: Washing and cleaning products (including solvent based products).

For further information on standardized use descriptors see the European Chemical Agency (ECHA) Guidance on information requirements and chemical safety assessment, Chapter R.12: Use descriptor system (http://guidance.echa.europa.eu/docs/guidance_document/ information requirements r12 en.pdf).

2. Conditions of use affecting exposure

2.1 Control of workers exposure

General:

In accordance to the Article 14 (2a-f) of the REACH Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the substance in a preparation is less than 1%.

Product characteristics:

Concentration of substance: Up to 1%.

2.2 Control of environmental exposure

General:

As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.

Effect/Compartment Exposure estimate/PEC BCB Notes Not Applicable In accordance to the Article 14 (2a-1) of the FEC/F Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the substance in a proparation is less than 1%. In accordance to the Article 14 (2a-1) of the FEC/F Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the substance in the proparation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed (II) Consumer use - Consumer use in polishes, was blends, washing and cleaning products III List of the exposure scenario: Consumer use - Consumer use in polishes, was blends, washing and cleaning products Consumer use - Consumer use in polishes, was blends, washing and cleaning products Exposure scenario (B) Rout category (FC): FC31; FC33 FC34 Rout data data data data data data data da	3. Exposure estimation and reference to its source			
Not Applicable in accordance to the Article 14 (2x-f) of the PEACH Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the substance in a preparation is less than 1%. Concentration of substance: Up to 1%. Exposure scanards (6) Short tile of the consure ruse - Consumer use in polishes, wax blends, washing and cleaning products Exposure scanards (7) Short tile of the exposure scanards. Short tile of the exposure scanards (8) Consumer use - Consumer use in polishes, wax blends, washing and cleaning products Exposure scanards (7) Short tile of the exposure scanards. Consumer use - Consumer use in polishes, wax blends, washing and cleaning products Exposure scanards (7) Consumer use - Consumer use in polishes, wax blends, washing and cleaning products Exposure scanards (8) Consumer use - Consumer use - Consumer use in polishes, wax blends, washing and cleaning products Exposure scanards (8) Consumer use - Consumer - Consumer - Consumer use - Consumer - Consumer - Consumer -	Effect/Compartment Ex	posure estimate/PEC	RCR	Notes
In accordance to the Article 14 (2a-f) of the REACH Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the substance in a preparation is less than 1%. 4. Guidance to the Downstream User to avaluate whether he works inside the boundaries set by the ES Health: Concentration of substance up to 1%. Exposure scenario (6): Consumer use - Consumer use in polishes, wax blends, washing and cleaning products I separate scenario (7): Consumer use - Consumer use in polishes, wax blends, washing and cleaning products Consumer use - Consumer use in polishes, wax blends, washing and cleaning products Consumer use - Consumer use in polishes, wax blends, washing and cleaning products Consumer use - Consumer use in polishes, wax blends, washing and cleaning products Consumer use - Consumer use in polishes, wax blends, washing and cleaning products Consumer use - Consumer use in polishes, wax blends, washing and cleaning products Consumer use - Consumer use in polishes, wax blends, washing and cleaning products Consumer use - Consumer use in polishes, wax blends, washing and cleaning products Consumer use - Consumer use in polishes, wax blends, washing and cleaning products Consumer use - Consumer use in polishes, wax blends, washing and cleaning products Consumer use - Consumer use in polishes, wax blends, washing and cleaning products Consumer use - Consumer use in polishes, wax blends, washing and cleaning products Consumer use - Consumer use acceling exposure estimation on a ricke, outdoor). ERG8 Widespread use of non-reactive processing aid (no inclusion into or ono article, outdoor). ERG8 Widespread use of non-reactive processing aid (no inclusion into or ono article, outdoor). ERG8 Widespread use of non-reactive processing aid (no inclusion end or exposure estimation and risk characteristic distribution requirements and chemical products distribution (the DACH) Regulation (EC) No 1907/2006, exposure estimation and risk characterization was performed. Substance. In a	Not Applicable			
4. Guidance to the Downstream User to evaluate whether he works inside the boundaries set by the ES Health: Concontration of substance: Up to 1%. Exposure scenario (6): Consumer use - Consumer use in polishes, wax blends, washing and cleaning products I. Exposure scenario (7): Consumer use - Consumer use in polishes, wax blends, washing and cleaning products Consumer use - Consumer use in polishes. Way blends, washing and cleaning products Consumer use - Consumer use in polishes. Way blends, washing and cleaning products Consumer use - Consumer use in polishes. Way blends, washing and cleaning products Consumer use - Consumer use in polishes. Way blends, washing and cleaning products Consumer use - Consumer use in polishes. Way blends, washing and cleaning products Consumer use - Consumer use in polishes. Way blends, washing and cleaning products Consumer use - Consumer use and consumer products and corresponding ERCs: ERC8. Widespread use on non-reactive processing aid (no inclusion into or onto article, indoor), ERC8 Widespread use on non-reactive processing aid (no inclusion into or onto article, indoor), ERC8 Widespread use on non-reactive processing aid (no inclusion into or not article, indoor), ERC8 Widespread use on non-reactive processing aid (no inclusion into or not article, indoor), ERC8 Widespread use on non-reactive processing aid (no inclusion into or not article, indoor), ERC8 Widespread use on non-reactive processing aid (no inclusion into or not article, indoor), ERC8 Widespread use on non-reactive processing aid (no inclusion withic contain the or una trice), or further information on standardized use descriptors system (http://guidance.acha.auropa.eu/docs/guidance_document/ information_requirements r12, en.pdf). Extreme exposure Extreme knowledge there are no preparation is thest than the concentrations > 1%. Assessment of uses of this substance. In accordance to the Article 14 (2a-f) of the REACH Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to b	In accordance to the Article 14 (2a-f) of the REACH Reg to be performed if the substance in a preparation is less	ulation (EC) No 1907/2006 than 1%.	, exposure estimatio	n and risk characterisation does not need
Health: Concentration of substance: Up to 1%. Exposure scenario (6): Consumer use - Consumer use in polishes, wax blends, washing and cleaning products 11: Exposure scenario (7): Consumer use in polishes, wax blends, washing and cleaning products 11: End fuse decaritors: Product category (PC): PC31, PC33 Product category (PC): PC31, PC33 PC33 PC38: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor). ERC84 Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor). PC31: Polishes and wax blends. PC31: PC33 PC31: PC33 PC33: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor). ERC84 Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor). PC31: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor). ERC84 Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor). PC31: Widespread use of non-reactive processing aid (no inclusion with contain this substance in anoremation requirements and information requirements and accessing exposure 2: Controid or oursent knowledge threa are no preparations / formulations which contain this substance in concentrations and reference to its substance in a preparation is less than 1%. Product barcestististis: Concentration of substance in a preparation is less than 1%. Product barcest	4. Guidance to the Downstream User to evaluate wheth	er he works inside the bo	undaries set by the	ES
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1. Exposure scenario (5) 2. Dorbuilte of the exposure scenario: Consumer use in polishes, wax blends, washing and cleaning products List of use descriptors: Product category (PC): PC31, PC35 PC31; PC358 and wax blends PC35; Washing and cleaning products (including solvent based products). PC31; PC31; PC358 and wax blends PC35; Washing and cleaning products (including solvent based products). PC35; Washing and cleaning products (including solvent based products). PC35; Washing and cleaning products (including solvent based products). PC35; Washing and cleaning products (including solvent based products). PC35; Washing and cleaning products (including solvent based products). PC35; Washing and cleaning products (including solvent based products). PC35; Washing and cleaning products (including solvent based products). PC35; Washing and cleaning products (including solvent based products). PC35; Washing and cleaning products (including solvent based products). PC35; Washing and cleaning products (including solvent based products). PC35; Washing and cleaning products (including solvent based products). PC35; Washing and cleaning products (including solvent based products). PC36; Washing and cleaning products (including solvent based solvent and risk characterization and risk characterization does not need to be performed if the substance in a preparation is less than 1%. PC40; Constant and substance: Up to 1%. 22 Control of exposure Category (PC): PC3 Cate	Exposure scenario (6): Consumer use - Consumer	use in polishes, wax ble	ends, washing and	cleaning products
Short mice of the exposure scenario: Consumer use: Consumer use in polishes, wax blends, washing and cleaning products List of use descriptors: Product category (PC): PC31; PC35 Environmental release category (PC): PC32, PC38, ERC84 Environmental release category (PC): PC32, PC38, ERC84 Environmental release category (PC): PC32, PC38, ERC84 ERC84 Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor). ERC84 Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor). Further explanations: PC31: Polishes and was blends. PC31: Delishes and was blends. PC32: Delishes and was blends. PC32: Delishes and was blends. PC34: Delishes and was blends. PC34: Delishes and was blends. PC34: Delishes and was identified no environmental-related exposure assessment and risk characterization was performed. 2. Exposure scenario: Dis Delishes. PC34: Delishes and reference to its osure: EffectiComperiment Not Applicable. PC34: Delishes and reference to its as then 1%. Concentration of substance: Up 10 1%. PC34: Delishes category (EPC1): ERC8a PC34: Delishes category (EPC2): ERC8a PC34: Delishes category (EPC2): ERC8a PC34: De	1. Exposure scenario (6)			
List of use descriptors: Construction of the second of the s	Consumer use - Consumer use in polishes, wax blends	washing and cleaning proc	lucts	
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 - CS1: Electrical evaporators. - CS2: Air care products - concentration <1%. For further information on standardized use descriptors see the European Chemical Agency (ECHA) Guidance on information requirements and chemical safety assessment, Chapter R.12: Use descriptor system (http://guidance.echa.europa.eu/docs/guidance_document/ information_requirements_r12_en.pdf). 2. Conditions of use affecting exposure 2.1 Control of consumer exposure General: CS2: Assessment of uses of this substance in consumer products has not been performed as there were no end products identified which contain more than 1% of this substance. 	PC3 Air care products:			
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 chemical safety assessment, Chapter R.12: Use descriptor system (http://guidance.echa.europa.eu/docs/guidance_document/ information_requirements_r12_en.pdf). Conditions of use affecting exposure Control of consumer exposure General: CS2: Assessment of uses of this substance in consumer products has not been performed as there were no end products identified which contain more than 1% of this substance. 	For further information on standardized use descriptors	see the European Chemica	Agency (ECHA) G	idance on information requirements and
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2. Conditions of use affecting exposure 2.1 Control of consumer exposure General: CS2: Assessment of uses of this substance in consumer products has not been performed as there were no end products identified which contain more than 1% of this substance.	information_requirements_r12_en.pdf).		-	
Control or consumer exposure General: CS2: Assessment of uses of this substance in consumer products has not been performed as there were no end products identified which contain more than 1% of this substance.	2. Conditions of use affecting exposure			
CS2: Assessment of uses of this substance in consumer products has not been performed as there were no end products identified which contain more than 1% of this substance.	2. I Control of consumer exposure			
more than 1% of this substance.	CS2: Assessment of uses of this substance in consumer	r products has not been per	formed as there wer	re no end products identified which contain
	more than 1% of this substance.		-	

Product characteristics: Concentration of substance in product:

- CS1: Up to 7%.					
- CS2: Up to 1%. Exposure via inhalation r	oute: CS1: Yes				
Exposure via dermal route: Contres. Exposure via dermal route: Dermal exposure assumed to be negligible.					
Spray: CS1: Yes.					
Airborne fraction of the no	on-volatile material: CS1: 10 n-volatile material: CS1: 100	0%. %			
Applied amounts for each	n use event: CS1: Inhalation	mass generation rate 0.00002	2 g/sec for spray d	luration 2.88E4 sec.	
Frequency and duration	of use/exposure:				
Duration covers exposur	e up to: CS1: 8 hours/event.	ear			
Other given operational	conditions affecting consum	ners exposure:			
Inhalation exposure mod	el - CS1: covers use in room	size of 16 m3.			
Conditions and measure	es related to personal protect	ction and hygiene:			
2 2 Control of environme	ntal exposure				
General:					
As no environmental haz	ard was identified no enviror	nmental-related exposure asse	ssment and risk cl	naracterization was performed.	
3. Exposure estimation a	nd reference to its source				
Assessment method-Hea	alth: ConsExpo v4.1.				
Health					
Effect/Compartment		Exposure estimate/PEC	<u>RCR</u>	Notes	
Consumer, long-term, s	ystemic, Inhalation	0,02992 mg/m3	0,002302	CS1 Electrical evaporators	
BCB=Bisk characterizati	on ratio (PEC/PNEC or Exp	0,005048 mg/kg bw/day	0,002302	ental concentration	
A Guidence to the Down	otream Lear to evaluate wh	osther he works inside the her	inderice act by the		
Health:	Predicted exposures are n	ot expected to exceed the DN	M)FI when the Rig	sk Management Measures/Operational	
	Conditions outlined in Sec	tion 2 are implemented. Where	other Risk Manag	ement Measures/Operational Condition	IS
	are adopted, then users sh	ould ensure that risks are mar	aged to at least ec	quivalent levels. Concentration of	
Exposure scenario (8):		er end-use of cosmetics			
1. Exposure scenario (8)					/
Short title of the exposu	re scenario:				
Short title of the exposu Consumer use - Consum	re scenario: ler end-use of cosmetics				
Short title of the exposu Consumer use - Consum List of use descriptors: Product category (PC): E	re scenario: ler end-use of cosmetics				
Short title of the exposu Consumer use - Consum List of use descriptors: Product category (PC): F Environmental release ca	re scenario: er end-use of cosmetics PC28, PC39 ategory (ERC): ERC8a				
Short title of the exposu Consumer use - Consum List of use descriptors: Product category (PC): F Environmental release ca Name of contributing en	re scenario: ler end-use of cosmetics C28, PC39 ategory (ERC): ERC8a vironmental scenario and c	orresponding ERCs:			
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List of use descriptors: Product category (PC): PC8

Environmental release category (ERC): ERC8a, ERC8d

Name of contributing environmental scenario and corresponding ERCs:

ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor). ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor).

Further explanations:

PC8 Biocidal products (e.g. Disinfectants, pest control):

- CS1: Insecticides/repellents liquid/adult.
- CS2: Insecticides/repellents liquid/child.
- CS3: Insecticides/repellents spray.

- CS4: Insecticides/repellents - spray post application/child.

- CS5: Disinfectants, pest control - concentration <1%.

For further information on standardized use descriptors see the European Chemical Agency (ECHA) Guidance on information requirements and chemical safety assessment, Chapter R.12: Use descriptor system (http://guidance.echa.europa.eu/docs/guidance_document/ information_requirements_r12_en.pdf).

2. Conditions of use affecting exposure

2.1 Control of consumer exposure

General:

CS5: Assessment of uses of this substance in consumer products has not been performed as there were no end products identified which contain more than 1% of this substance.

Product characteristics:

Concentration of substance in product:

- CS1, CS2, CS3, CS4: Up to 1.4%.
- CS5: Up to 1%.

Exposure via inhalation route: CS3: Yes. CS1, CS2, CS4: Not relevant.

Exposure via dermal route: Yes.

Oral contact foreseen: CS3: No. CS1, CS2, CS4: Yes.

Spray: CS1, CS2, CS4: No. CS3: Yes.

Airborne fraction of the non-volatile material: CS3: 30%.

Weight fraction of the non-volatile material: CS3: 50%

Amounts used:

Applied amounts for each use event:

- CS1: 6 g.
- CS2: 1.5 g.

- CS3: Inhalation mass generation rate 1.1 g/sec for spray duration 19.8 sec; Dermal contact rate 269 mg/min for 19.8 sec.

Skin contact area - covers skin contact area up to:

- CS1, CS3: 17500 cm2.

- CS2, CS4: 4800 cm2.

Frequency and duration of use/exposure:

Duration covers exposure up to:

- CS1, CS2: 180 minutes/event (dermal, oral).
- CS3: 240 minutes/event (inhalation); 19.8 seconds/event (dermal).
- CS4: 3600 seconds/event (dermal); 60 minutes/event (oral).
- Frequency covers use frequency:
- CS1, CS2: 54 times/year.
- CS3, CS4: 90 times/year.

Human factors not influenced by risk management:

Ingestion rate:

- CS1: 0.00133 mg/min.

- CS2: 0.00083 mg/min.

- CS4: 0.010496 mg/min.

Other given operational conditions affecting consumers exposure:

CS3: Covers use in room size of 58 m3.

CS4: Rubbed surface 22 m2; Dislodgeable amount 0.000082 g/cm2; Transfer coefficient: 1.667 cm2/s.

Uptake fraction: 100%.

Conditions and measures related to personal protection and hygiene:

General ventilation: ventilation rate: CS3: 0.5 l/ hour. 2.2 Control of environmental exposure

General:

Health

As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.

3. Exposure estimation and reference to its source

Assessment method-Health: ConsExpo v4.1. Only highest figures are presented here.

	Effect/Compartment	Exposure estimate/PEC	<u>RCR</u>	<u>Notes</u>
	Consumer, long-term, systemic, Dermal	0,35752 mg/kg bw/day	0,014301	CS2 Insecticides/repellents - liquid/child
	Consumer, long-term, systemic, Inhalation	0,005683 mg/m3	0,000437	CS3 Insecticides/repellents spray
	Consumer, long-term, systemic, Oral	0,00025 mg/kg bw/day	0,000033	CS4 Insecticides/repellents - spray post application/child
_	Consumer, long-term, systemic, Combined routes	0,357556 mg/kg bw/day	0,014306	CS2 Insecticides/repellents - liquid/child
_				

RCR=Risk characterization ratio (PEC/PNEC or Exposure estimate/DNEL); PEC=Predicted environmental concentration.

4. Guidance to the Downstream User to evaluate whether he works inside the boundaries set by the ES				
Health:	Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational			
	Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions			
	are adopted, then users should ensure that risks are managed to at least equivalent levels.			