SAFETY DATA SHEET
Hexyl Cinnamic Aldehyde

According to Regulation (EC) No 1907/2006, Annex II, as amended. Commission Regulation (EU) No 2015/830 of 28 May 2015.

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

1.1. Product identifier

Product name	Hexyl Cinnamic Aldehyde
Product number	8450, 8451, 8455, 8459, 8455-GB, 8455-FR, 8450-AU, 8450-BE, 8450-BR, 8450-CN, 8450-FR, 8450-DE, 8450-ID, 8450-IT, 8450-JP, 8450-KR, 8450-MY, 8450-MX, 8450-NL, 8450-PL, 8450-ES, 8450-CH, 8450-TR, 8450-GB, 8450-US, 8451-AU, 8451-BE, 8451-BR, 8451-CN, 8451-FR, 8451-DE, 8451-ID, 8451-IT, 8451-JP, 8451-KR, 8451-MY, 8451-MX, 8451-NL, 8451-PL, 8451-ES, 8451-CH, 8451-TR, 8451-GB, 8451-US, 8455-AU, 8455-BE, 8455-BR, 8455-CN, 8455-DE, 8455-ID, 8455-IT, 8455-JP, 8455-KR, 8455-MY, 8455-MX, 8455-NL, 8455-PL, 8455-ES, 8455-CH, 8455-TR, 8455-US, 8459-AU, 8459-BE, 8459-BR, 8459-CN, 8459-FR, 8459-DE, 8459-ID, 8459-IT, 8459-JP, 8459-KR, 8459-MY, 8459-MX, 8459-NL, 8459-PL, 8459-ES, 8459-CH, 8459-TR, 8459-GB, 8459-US
Synonyms; trade names	(2E)-2-(phenylmethylidene)octanal, (2E)-3-phenyl-2-hexyl-prop-2-enal, (2E)-2-Benzylideneoctanal, Octanal, 2-(phenylmethylene)-, Hexyl Cinnamal, α-n-hexylcinnamaldehyde
REACH registration number	01-2119533092-50-0003
CAS number	165184-98-5
EC number	639-566-4
Further Information	The above CAS Number and name is for Europe, only for the main isomer. For the rest of the world, the name Hexyl Cinnamic Aldehyde and CAS number cover the isomer mixture. CAS Number: 101-86-0 (Isomer mixture)

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

Identified uses	Flavour and fragrance ingredient.
Uses advised against	No specific uses advised against are identified.

1.3. Details of the supplier of the safety data sheet

Hexyl Cinnamic Aldehyde

Supplier

Tennants Fine Chemicals
Macclesfield Road (Head Office)
Leek
Staffordshire
ST13 8LD
UK

Tennants Fine Chemicals PTE Limited
163 Tras Street
#03-01
Lin Huat Building
Singapore (079024)

+44 (0) 1538 392180
sdsadvice@tennantsfinechemicals.com

1.4. Emergency telephone number

Emergency telephone

+44 (0) 1273 289454
+44 1865 407333
Can assist with advice on Spillage and further information on SDS content.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards Not Classified

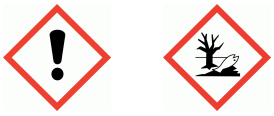
Health hazards Skin Sens. 1 - H317

Environmental hazards Aquatic Acute 1 - H400 Aquatic Chronic 2 - H411

2.2. Label elements

EC number 639-566-4

Hazard pictograms



Signal word Warning

Hazard statements

H317 May cause an allergic skin reaction.
H400 Very toxic to aquatic life.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

P261 Avoid breathing vapour/ spray.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P302+P352 IF ON SKIN: Wash with plenty of water.
P321 Specific treatment (see medical advice on this label).
P333+P313 If skin irritation or rash occurs: Get medical advice/ attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P391 Collect spillage.
P501 Dispose of contents/ container in accordance with national regulations.

2.3. Other hazards

Hexyl Cinnamic Aldehyde

This substance is not classified as PBT or vPvB according to current EU criteria.

SECTION 3: Composition/information on ingredients

3.1. Substances

Hexyl Cinnamic Aldehyde **>93%**

CAS number: 165184-98-5 EC number: 639-566-4 REACH registration number: 01-2119533092-50-0003

M factor (Acute) = 1

Classification
Skin Sens. 1 - H317
Aquatic Acute 1 - H400
Aquatic Chronic 2 - H411

(2Z)-2-Benzylideneoctanal **<5%**

CAS number: 364364-06-7

2-tert-butylhydroquinone **~0.2%**

CAS number: 1948-33-0 EC number: 217-572-2

Product name	Hexyl Cinnamic Aldehyde
REACH registration number	01-2119533092-50-0003
CAS number	165184-98-5
EC number	639-566-4
Chemical formula	$C_{15}H_{20}O$

SECTION 4: First aid measures

4.1. Description of first aid measures

General information Get medical attention immediately. Show this Safety Data Sheet to the medical personnel.

Inhalation Remove affected person from source of contamination. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Place unconscious person on their side in the recovery position and ensure breathing can take place.

Ingestion Rinse mouth thoroughly with water. Remove any dentures. Give a few small glasses of water or milk to drink. Stop if the affected person feels sick as vomiting may be dangerous. Do not induce vomiting unless under the direction of medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Place unconscious person on their side in the recovery position and ensure breathing can take place. Maintain an open airway. Loosen tight clothing such as collar, tie or belt.

Skin contact It is important to remove the substance from the skin immediately. In the event of any sensitisation symptoms developing, ensure further exposure is avoided. Remove contamination with soap and water or recognised skin cleansing agent. Get medical attention if symptoms are severe or persist after washing.

Hexyl Cinnamic Aldehyde

Eye contact	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 10 minutes.
Protection of first aiders	First aid personnel should wear appropriate protective equipment during any rescue. If it is suspected that volatile contaminants are still present around the affected person, first aid personnel should wear an appropriate respirator or self-contained breathing apparatus. Wash contaminated clothing thoroughly with water before removing it from the affected person, or wear gloves. It may be dangerous for first aid personnel to carry out mouth-to-mouth resuscitation.

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

General information	See Section 11 for additional information on health hazards. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	Prolonged inhalation of high concentrations may damage respiratory system.
Ingestion	May cause sensitisation or allergic reactions in sensitive individuals. Gastrointestinal symptoms, including upset stomach. Fumes from the stomach contents may be inhaled, resulting in the same symptoms as inhalation.
Skin contact	May cause skin sensitisation or allergic reactions in sensitive individuals. Prolonged contact may cause dryness of the skin.
Eye contact	May cause temporary eye irritation.

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

Notes for the doctor	Treat symptomatically. May cause sensitisation or allergic reactions in sensitive individuals.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards	Containers can burst violently or explode when heated, due to excessive pressure build-up.
Hazardous combustion products	Thermal decomposition or combustion products may include the following substances: Harmful gases or vapours.

5.3. Advice for firefighters

Protective actions during firefighting	Avoid breathing fire gases or vapours. Evacuate area. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapours and protect men stopping the leak. Avoid discharge to the aquatic environment. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.
Special protective equipment for firefighters	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Hexyl Cinnamic Aldehyde

Personal precautions No action shall be taken without appropriate training or involving any personal risk. Keep unnecessary and unprotected personnel away from the spillage. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Wash thoroughly after dealing with a spillage. Ensure procedures and training for emergency decontamination and disposal are in place. Do not touch or walk into spilled material. Avoid contact with skin and eyes.

6.2. Environmental precautions

Environmental precautions Immiscible with water. Aquatic toxicity is unlikely to occur. However, large or frequent spills may have hazardous effects on the environment. Absorb spillage with non-combustible, absorbent material. Avoid discharge into drains or watercourses or onto the ground. Avoid discharge to the aquatic environment. Large Spillages: Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air).

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Any absorbent material used to mop up a spill must be thoroughly wetted and disposed of in a closed metal container. Approach the spillage from upwind. Small Spillages: Absorb the spillage with an inert, dry material and place it in a suitable waste disposal container. Large Spillages: If leakage cannot be stopped, evacuate area. Flush spilled material into an effluent treatment plant, or proceed as follows. Contain and absorb spillage with sand, earth or other non-combustible material. Place waste in labelled, sealed containers. Clean contaminated objects and areas thoroughly, observing environmental regulations. The contaminated absorbent may pose the same hazard as the spilled material. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. Dangerous for the environment. Do not empty into drains. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Handle all packages and containers carefully to minimise spills. Keep container tightly sealed when not in use. Avoid the formation of mists. Avoid discharge to the aquatic environment. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Do not reuse empty containers.

Advice on general occupational hygiene Wash promptly if skin becomes contaminated. Take off contaminated clothing. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Change work clothing daily before leaving workplace.

7.2. Conditions for safe storage, including any incompatibilities

Hexyl Cinnamic Aldehyde

Storage precautions Store away from incompatible materials (see Section 10). Store in accordance with local regulations. Keep only in the original container. Keep container tightly closed and in a well-ventilated place. To avoid freezing, product can be stored between 25°C/77°F and 40°C/104°F. Keep containers upright. Protect containers from damage. Bund storage facilities to prevent soil and water pollution in the event of spillage. The storage area floor should be leak-tight, jointless and not absorbent. Store IBCs away from direct sunlight and heat.
Reheating solid material:
If the contents of a container have frozen (either partly or completely), then the whole container must be slowly heated and only sampled when all the material has melted. This is to ensure that the sample is representative. It is recommended that this be carried out by use of a drum heater or hot room, to prevent the material exceeding 40°C.

Storage class Miscellaneous hazardous material storage.

Further Information Suitable storage material – 316 Stainless Steel. Suitable seals - Perfluoroelastomer (Kalrez). Suitable gaskets – graphite supported on 316 Stainless steel or asbestos free aramid fibre composite. Store in a demarcated bunded area to prevent release to drains and/or watercourses.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

DNEL
Workers - Inhalation; Long term systemic effects: 0.078 mg/m³
Workers - Inhalation; Short term local effects: 6.28 mg/m³
Workers - Dermal; Long term systemic effects: 18.2 mg/kg/day
Workers - Dermal; Long term local effects: 0.525 mg/cm²
Workers - Dermal; Short term local effects: 0.525 mg/cm²
General population - Inhalation; Long term systemic effects: 0.019 mg/m³
General population - Inhalation; Short term local effects: 4.71 mg/m³
General population - Dermal; Long term systemic effects: 9.11 mg/kg/day
General population - Dermal; Long term local effects: 0.0787 mg/cm²
General population - Dermal; Long term local effects: 0.0787 mg/cm²
General population - Oral; Long term systemic effects: 0.056 mg/kg/day

PNEC
Fresh water; 0.00138 mg/l
marine water; 0.000138 mg/l
Intermittent release; 0.03 mg/l
Sediment (Freshwater); 3.2 mg/kg
Sediment (Marinewater); 0.064 mg/kg
STP; 10 mg/l
Soil; 9.51 mg/kg
Oral; 6.6 mg/kg

8.2. Exposure controls

Appropriate engineering controls Provide adequate ventilation. Personal, workplace environment or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Use process enclosures, local exhaust ventilation or other engineering controls as the primary means to minimise worker exposure. Personal protective equipment should only be used if worker exposure cannot be controlled adequately by the engineering control measures. Ensure control measures are regularly inspected and maintained. Ensure operatives are trained to minimise exposure.

Hexyl Cinnamic Aldehyde

Eye/face protection	Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment for eye and face protection should comply with European Standard EN166. Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses.
Hand protection	Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with European Standard EN374. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.
Other skin and body protection	Appropriate footwear and additional protective clothing complying with an approved standard should be worn if a risk assessment indicates skin contamination is possible.
Hygiene measures	Provide eyewash station and safety shower. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Clean equipment and the work area every day. Good personal hygiene procedures should be implemented. Wash at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke. Preventive industrial medical examinations should be carried out. Warn cleaning personnel of any hazardous properties of the product.
Respiratory protection	Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with European Standard EN14387. Full face mask respirators with replaceable filter cartridges should comply with European Standard EN136. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140.
Environmental exposure controls	Keep container tightly sealed when not in use. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Clear liquid.
Colour	Yellow.
Odour	Floral.
Odour threshold	Not determined.
pH	pH (diluted solution): 4 - 7 (1.62 mg/l)
Melting point	17.6°C/63.7°F
Initial boiling point and range	310.8°C/591.4°F @ 101.3 kPa
Flash point	151°C / 304°F Method: Closed cup.
Evaporation rate	Not determined.
Evaporation factor	Not determined.
Flammability (solid, gas)	Not applicable.

Hexyl Cinnamic Aldehyde

Upper/lower flammability or explosive limits	Not determined.
Vapour pressure	0.068 Pa @ 25°C/77°F OECD 104.
Vapour density	Not determined.
Relative density	0.95 @ 20°C/68°F
Solubility(ies)	0.00162 g/l water @ 20°C/68°F
Partition coefficient	log Kow: 5.3
Auto-ignition temperature	235.5°C/456°F
Decomposition Temperature	Not determined.
Viscosity	11 cP @ 25°C/77°F
Explosive properties	There are no chemical groups present in the product that are associated with explosive properties.
Oxidising properties	There are no chemical groups present in the product that are associated with oxidising properties.

9.2. Other information

Other information	Electrical Conductivity: 0.052 µS/cm Gas Group and Temperature Class: Group IIB Class T3.
Molecular weight	216.33

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity Upon exposure to air, slowly oxidises to acid.

10.2. Chemical stability

Stability Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions The following materials may react with the product: Oxidising agents.

10.4. Conditions to avoid

Conditions to avoid Avoid excessive heat for prolonged periods of time. Containers can burst violently or explode when heated, due to excessive pressure build-up.

10.5. Incompatible materials

Materials to avoid No specific material or group of materials is likely to react with the product to produce a hazardous situation.

10.6. Hazardous decomposition products

Hazardous decomposition products Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Harmful gases or vapours.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

Hexyl Cinnamic Aldehyde

Acute toxicity oral (LD_{50} mg/kg)	3,100.0
Species	Rat
Notes (oral LD_{50})	OECD 401.
ATE oral (mg/kg)	3,100.0

Acute toxicity - dermal

Acute toxicity dermal (LD_{50} mg/kg)	3,000.0
Species	Rabbit
Notes (dermal LD_{50})	OECD 402.
ATE dermal (mg/kg)	3,000.0

Acute toxicity - inhalation

Notes (inhalation LC_{50})	LC_{50} >2.12 mg/l, Inhalation, Rat OECD 403.

Skin corrosion/irritation

Animal data	Dose: 0.5mL, 4 hours, Rabbit Erythema/eschar score: Well defined erythema (2). Oedema score: Slight oedema - edges of area well defined by definite raising (2). Not irritating. OECD 404.

Serious eye damage/irritation

Serious eye damage/irritation	Dose: 0.1mL, <7 days, Rabbit Cornea score: 0 Iris score: 0 Conjunctivae score: 0.33 Chemosis score: 0 Not irritating. OECD 405.

Respiratory sensitisation

Respiratory sensitisation	Based on available data the classification criteria are not met.

Skin sensitisation

Skin sensitisation	Local Lymph Node Assay (LLNA) - Mouse: Sensitising. OECD 429.

Germ cell mutagenicity

Genotoxicity - in vitro	Ames test: Negative. OECD 471. Gene mutation: Negative. OECD 476.
Genotoxicity - in vivo	Chromosome aberration: Negative. OECD 474.

Carcinogenicity

Carcinogenicity	Based on available data the classification criteria are not met.
IARC carcinogenicity	None of the ingredients are listed or exempt.

Reproductive toxicity

Reproductive toxicity - fertility	Screening - NOAEL >=100 mg/kg/day, Oral, Rat P, F1 OECD 421.
Reproductive toxicity - development	Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure	Not classified as a specific target organ toxicant after a single exposure.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure	NOAEL 150 mg/kg/day, Oral, Rat OECD 408. LOAEL 125 mg/kg/day, Dermal, Rat OECD 411.

Aspiration hazard

Hexyl Cinnamic Aldehyde

Aspiration hazard	Based on available data the classification criteria are not met.
General information	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	Prolonged inhalation of high concentrations may damage respiratory system.
Ingestion	May cause sensitisation or allergic reactions in sensitive individuals. Gastrointestinal symptoms, including upset stomach. Fumes from the stomach contents may be inhaled, resulting in the same symptoms as inhalation.
Skin contact	May cause skin sensitisation or allergic reactions in sensitive individuals. Prolonged contact may cause dryness of the skin.
Eye contact	May cause temporary eye irritation.
Route of exposure	Ingestion Inhalation Skin and/or eye contact
Target organs	No specific target organs known.
Medical considerations	Skin disorders and allergies.

SECTION 12: Ecological information

12.1. Toxicity

Acute aquatic toxicity

LE(C)$_{50}$	0.1 < L(E)C50 ≤ 1
M factor (Acute)	1
Acute toxicity - fish	LC_{50}, 96 hours: 1.7 mg/l, Pimephales promelas (Fat-head Minnow) OECD 203.
Acute toxicity - aquatic invertebrates	EC_{50}, 48 hours: 0.247 mg/l, Daphnia magna OECD 202.
Acute toxicity - aquatic plants	NOEC, 72 hours: 0.065 mg/l, Desmodesmus subspicatus OECD 201.
Acute toxicity - microorganisms	NOEC, 28 days: 32 mg/kg, Lumbriculus variegatus OECD 225.

Chronic aquatic toxicity

Chronic toxicity - aquatic invertebrates	NOEC, 21 days: 0.069 mg/l, Daphnia magna OECD 211.

12.2. Persistence and degradability

Persistence and degradability	The substance is readily biodegradable.
Biodegradation	Water - Degradation 97%: 28 days OECD 301 F.

12.3. Bioaccumulative potential

Bioaccumulative potential	No data available on bioaccumulation.
Partition coefficient	log Kow: 5.3

12.4. Mobility in soil

Mobility	The product is insoluble in water.

Hexyl Cinnamic Aldehyde

Adsorption/desorption coefficient Soil - Log Koc: 4.2 @ 25°C/77°F OECD 121.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

12.6. Other adverse effects

Other adverse effects None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information The generation of waste should be minimised or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.

Disposal methods Do not empty into drains. Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labelled with their contents. Incineration or landfill should only be considered when recycling is not feasible.

SECTION 14: Transport information

General For limited quantity packaging/limited load information, consult the relevant modal documentation using the data shown in this section.

14.1. UN number

UN No. (ADR/RID) 3082

UN No. (IMDG) 3082

UN No. (ICAO) 3082

UN No. (ADN) 3082

14.2. UN proper shipping name

Proper shipping name (ADR/RID) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS Hexyl Cinnamic Aldehyde)

Proper shipping name (IMDG) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS Hexyl Cinnamic Aldehyde)

Proper shipping name (ICAO) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS Hexyl Cinnamic Aldehyde)

Proper shipping name (ADN) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS Hexyl Cinnamic Aldehyde)

14.3. Transport hazard class(es)

ADR/RID class 9

ADR/RID classification code M6

Hexyl Cinnamic Aldehyde

ADR/RID label	9
IMDG class	9
ICAO class/division	9
ADN class	9

Transport labels

14.4. Packing group

ADR/RID packing group	III
IMDG packing group	III
ICAO packing group	III
ADN packing group	III

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

14.6. Special precautions for user

Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

EmS	F-A, S-F
ADR transport category	3
Emergency Action Code	•3Z
Hazard Identification Number (ADR/RID)	90

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

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

SECTION 15: Regulatory information

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

National regulations	Health and Safety at Work etc. Act 1974 (as amended). The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"]. EH40/2005 Workplace exposure limits.

Hexyl Cinnamic Aldehyde

EU legislation

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).
Commission Regulation (EU) No 2015/830 of 28 May 2015.
Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

15.2. Chemical safety assessment

A chemical safety assessment has been carried out.

Inventories

EU - EINECS/ELINCS

EINECS
(Isomer mixture)

Canada - DSL/NDSL

DSL
(Isomer mixture)

US - TSCA

Present.
(Isomer mixture)

US - TSCA 12(b) Export Notification

Not listed.

Australia - AICS

Present.
(Isomer mixture)

Japan - ENCS

Present.
(Isomer mixture)

Korea - KECI

Present.
(Isomer mixture)

China - IECSC

Present.
(Isomer mixture)

Philippines – PICCS

Present.
(Isomer mixture)

New Zealand - NZIOC

Present.
(Isomer mixture)

SECTION 16: Other information

Hexyl Cinnamic Aldehyde

Abbreviations and acronyms used in the safety data sheet	ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road. ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways. RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail. IATA: International Air Transport Association. ICAO: Technical Instructions for the Safe Transport of Dangerous Goods by Air. IMDG: International Maritime Dangerous Goods. CAS: Chemical Abstracts Service. ATE: Acute Toxicity Estimate. LC_{50}: Lethal Concentration to 50 % of a test population. LD_{50}: Lethal Dose to 50% of a test population (Median Lethal Dose). EC_{50}: 50% of maximal Effective Concentration. PBT: Persistent, Bioaccumulative and Toxic substance. vPvB: Very Persistent and Very Bioaccumulative.
Classification abbreviations and acronyms	Skin Sens. = Skin sensitisation Aquatic Acute = Hazardous to the aquatic environment (acute) Aquatic Chronic = Hazardous to the aquatic environment (chronic)
Classification procedures according to Regulation (EC) 1272/2008	Skin Sens. 1 - H317, Aquatic Acute 1 - H400, Aquatic Chronic 2 - H411: On basis of test data., Expert judgement., Weight of evidence.
Training advice	Read and follow manufacturer's recommendations. Only trained personnel should use this material.
Revision date	05/02/2018
Revision	1
SDS number	12
Hazard statements in full	H317 May cause an allergic skin reaction. H400 Very toxic to aquatic life. H411 Toxic to aquatic life with long lasting effects.

Exposure scenario
Formulation of fragrance compounds (compounding) to prepare concentrate

Identification

Product name	Hexyl Cinnamic Aldehyde
REACH registration number	01-2119533092-50-0003
CAS number	165184-98-5
EC number	639-566-4
Es reference	ES 1
Supplier	Tennants Fine Chemicals Macclesfield Road (Head Office) Leek Staffordshire ST13 8LD UK Tennants Fine Chemicals PTE Limited 163 Tras Street #03-01 Lin Huat Building Singapore (079024) +44 (0) 1538 392180 sdsadvice@tennantsfinechemicals.com

1. Title of exposure scenario

Main title	Formulation of fragrance compounds (compounding) to prepare concentrate
Process scope	Formulation of personal care products. The substance is mixed with fragrances, solvents and other chemicals in an industrial setting.
Environment	
	Industrial use of substance, including formulating activities
Environmental release category	ERC2 Formulation into mixture
Worker	
	Mixing or blending in a batch process (closed or open) Transfer of chemicals Filling containers Laboratory activities

Formulation of fragrance compounds (compounding) to prepare concentrate

Process category	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 PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC15 Use as laboratory reagent.

2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

Environmental release category	ERC2 Formulation into mixture

Product characteristics

Physical state	Liquid
Vapour pressure	0.068 Pa @ 25°C
Concentration details	Covers concentrations up to 100 %. Formulated products are non-viscous / slightly viscous liquids, containing solvents

Amounts used

Annual amount per site: 600 tonnes
Amount per use: 2000 kg/day

Frequency and duration of use

Emission days: 300 days/year

Other given operational conditions affecting environmental exposure

Emission factor - water	Release fraction to wastewater from process (initial release prior to RMM): 0.02% (Estimated)

Environmental factors not influenced by risk management measures

Dilution	Local freshwater dilution factor: 10 (Default)
Other factors	Wastewater emissions generated from equipment cleaning with water.

Risk management measures

STP type	Municipal STP.
STP details	Assumed domestic sewage treatment plant flow: 2000 m³/day Removal efficiency (total): 93%

Technical onsite conditions and measures to reduce or limit discharges to air, water and soil

Air	Limit release rate to air to 3.6 kg/day.
Water	Limit release rate to waste water to 0.40 kg/day. Any drainage or washings, including collection of spilled material must be collected for disposal either as hazardous waste or as waste water after checking in relation to local discharge consents. Assumed no on-site treatment processes. No specific controls for extract ventilation required.

2. Conditions of use affecting exposure (Workers - Health 1)

Control of workers exposure

Formulation of fragrance compounds (compounding) to prepare concentrate

Process category

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
PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
PROC15 Use as laboratory reagent.

Product characteristics

Physical state Liquid

Vapour pressure 0.068 Pa @ 25°C

Concentration details Maximum concentration after dilution for use: 100 %

The substance is mixed with fragrances, solvents and other chemicals in an industrial setting. Characteristics of other components may influence exposure.

Amounts used

Maximum daily site tonnage: 2000 kg

Frequency and duration of use

PROC 3 5 8a
Covers daily exposure up to 4hours

PROC 8b 9
Covers daily exposure up to 8hours

PROC 15
Covers daily exposure up to 1hour

Other given operational conditions affecting workers exposure

Setting Indoor use.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Room size Confined space. Avoid using in room size less than 300 m³.

Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures Store finished products in closed containers (e.g. bulk tanks, drums, cans). Dedicated facility

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Established management systems would include general industrial hygiene practice e.g.:

- information and training of workers on prevention of exposure/accidents
- procedures for control of personal exposure (hygiene measures)
- regular cleaning of equipment and floors, extended workers instruction-manuals
- procedures for process control and maintenance,
- personal protection measures

Risk management measures

Formulation of fragrance compounds (compounding) to prepare concentrate

Use suitable eye protection.
For exposure up to 8 hours, wear gloves made of the following material:
Polyvinyl chloride (PVC).
Gloves should comply with the requirements of EN 374.

Unsuitable glove material:
Rubber (natural, latex).

Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected.
Wear suitable coveralls to prevent exposure to the skin.

With normal handling, no respiratory personal protection (breathing apparatus) is necessary.
If risk of vapour generation
Wear a full facepiece respirator fitted with the following cartridge:
Organic vapour filter.

3. Exposure estimation (Environment 1)

Environmental release category	ERC2 Formulation into mixture
Assessment method	EUSES v2.1
Environmental exposure	Fresh water: Exposure 0.002 mg/l, PNEC 0.002 mg/l, RCR 1 Marine water: Exposure 0.001 mg/l, PNEC 0.001 mg/l, RCR 1 STP: Exposure 0.0004 mg/l, PNEC 10 mg/l, RCR 0.00004 freshwater sediment: Exposure 0.06 mg/kg, PNEC 3.2 mg/kg, RCR 0.02

4. Guidance to check compliance with the exposure scenario (Environment 1)

Environmental factors and days released have been scaled from the original CSR to reflect more accurate working practices. Guidance is based on assumed operating conditions which may not be applicable to all sites, thus, scaling may be necessary to define appropriate site-specific risk management measures. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

3. Exposure estimation (Health 1)

Assessment method	Used ECETOC TRA model. Used ART model.

Formulation of fragrance compounds (compounding) to prepare concentrate

Exposure

PROC3
Worker - inhalation, long-term - systemic: Exposure 0.0026 mg/m³, DNEL 0.078 mg/m³, RCR 0.04
Worker - dermal, long-term - systemic: Exposure 0.069 mg/kg/day, DNEL 18.2 mg/kg/day, RCR 0.004

PROC5
Worker - inhalation, long-term - systemic: Exposure 0.027 mg/m³, DNEL 0.078 mg/m³, RCR 0.35
Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 18.2 mg/kg/day, RCR 0.1

PROC8a
Worker - inhalation, long-term - systemic: Exposure 0.043 mg/m³, DNEL 0.078 mg/m³, RCR 0.55
Worker - dermal, long-term - systemic: Exposure 5.5 mg/kg/day, DNEL 18.2 mg/kg/day, RCR 0.3

PROC 8b 9
Worker - inhalation, long-term - systemic: Exposure 0.01 mg/m³, DNEL 0.078 mg/m³, RCR 0.13
Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 18.2 mg/kg/day, RCR 0.1

PROC15
Worker - inhalation, long-term - systemic: Exposure 0.01 mg/m³, DNEL 0.078 mg/m³, RCR 0.13
Worker - dermal, long-term - systemic: Exposure 0.069 mg/kg/day, DNEL 18.2 mg/kg/day, RCR 0.004

4. Guidance to check compliance with the exposure scenario (Health 1)

Guidance is based on assumed operating conditions which may not be applicable to all sites, thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e. RCRs > 1), additional RMM or a site-specific chemical safety assessment is required. 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.

Exposure scenario
Formulation of fragrances into end products (formulating)

Identification

Product name	Hexyl Cinnamic Aldehyde
REACH registration number	01-2119533092-50-0003
CAS number	165184-98-5
EC number	639-566-4
Es reference	ES 2
Supplier	Tennants Fine Chemicals Macclesfield Road (Head Office) Leek Staffordshire ST13 8LD UK Tennants Fine Chemicals PTE Limited 163 Tras Street #03-01 Lin Huat Building Singapore (079024) +44 (0) 1538 392180 sdsadvice@tennantsfinechemicals.com

1. Title of exposure scenario

Main title	Formulation of fragrances into end products (formulating)
Process scope	Formulation of cleaning products or personal care products for professional or consumer use. The substance is mixed with fragrances, solvents and other chemicals in an industrial setting.
Environment	
	Industrial use of substance, including formulating activities
Environmental release category	ERC2 Formulation into mixture
Worker	
	Mixing or blending in a batch process (closed or open) Transfer of chemicals Filling containers Production of solid products Laboratory activities

Formulation of fragrances into end products (formulating)

Process category	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 PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC14 Tabletting, compression, extrusion, pelletisation, granulation PROC15 Use as laboratory reagent.

2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

Environmental release category	ERC2 Formulation into mixture
	Indoor use.

Product characteristics

Physical state	Liquid
Vapour pressure	0.068 Pa @ 25°C
Concentration details	Maximum concentration after dilution for use: 25 %
	Formulated products are solid or liquid products

Amounts used

Fraction of Regional tonnage used locally: 1
Daily amount per site: 500 kg

Frequency and duration of use

Emission days: 300 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from process (after typical onsite RMMs): 2.5%
Emission factor - water	Release fraction to wastewater from process (initial release prior to RMM): 0.08% (Estimated)

Environmental factors not influenced by risk management measures

Dilution	Local freshwater dilution factor: 10 (Default)
Other factors	Wastewater emissions generated from equipment cleaning with water.

Risk management measures

STP type	Municipal STP.
STP details	Assumed domestic sewage treatment plant flow: 2000 m³/day Removal efficiency (total): 92%

Technical onsite conditions and measures to reduce or limit discharges to air, water and soil

Air	Limit release rate to air to 4.7 kg/day.
Water	Limit release rate to waste water to 0.75 kg/day.

Formulation of fragrances into end products (formulating)

Any drainage or washings, including collection of spilled material must be collected for disposal either as hazardous waste or as waste water after checking in relation to local discharge consents. Assumed no on-site treatment processes. No specific controls for extract ventilation required.

2. Conditions of use affecting exposure (Workers - Health 1)

Control of workers exposure

Process category

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
PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
PROC14 Tabletting, compression, extrusion, pelletisation, granulation
PROC15 Use as laboratory reagent.

Product characteristics

Physical state

Liquid

Vapour pressure

0.068 Pa @ 25°C

Concentration details

Maximum concentration after dilution for use: 25 %

Mixed with solvents and other substances to make liquid products. Characteristics of other components may influence exposure.

Frequency and duration of use

PROC 3 5
Covers daily exposure up to 4hour, hours

PROC 8a 14 15
Covers daily exposure up to 1hour

PROC 8b 9
Covers daily exposure up to 8hours

Other given operational conditions affecting workers exposure

Setting

Indoor use.

Temperature

Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Room size

Confined space. Avoid using in room size less than 300 m³.

Ventilation rate

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures

Store finished products in closed containers (e.g. bulk tanks, drums, cans). Final product going into small containers for consumer use

Organisational measures to prevent/limit releases, dispersion and exposure

Formulation of fragrances into end products (formulating)

Organisational measures

Established management systems would include general industrial hygiene practice e.g.:

- information and training of workers on prevention of exposure/accidents
- procedures for control of personal exposure (hygiene measures)
- regular cleaning of equipment and floors, extended workers instruction-manuals
- procedures for process control and maintenance,
- personal protection measures

Risk management measures

Use suitable eye protection.
For exposure up to 8 hours, wear gloves made of the following material:
Polyvinyl chloride (PVC).
Gloves should comply with the requirements of EN 374.

Unsuitable glove material:
Rubber (natural, latex).

Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected.
Wear suitable coveralls to prevent exposure to the skin.

With normal handling, no respiratory personal protection (breathing apparatus) is necessary.
If risk of vapour generation
Wear a full facepiece respirator fitted with the following cartridge:
Organic vapour filter.

3. Exposure estimation (Environment 1)

Environmental release category

ERC2 Formulation into mixture

Environmental exposure

Fresh water: Exposure 0.002 mg/l, PNEC 0.002 mg/l, RCR 1
STP: Exposure 0.0004 mg/l, PNEC 10 mg/l, RCR 0.00004
freshwater sediment: Exposure 0.06 mg/kg, PNEC 3.2 mg/kg, RCR 0.02
Marine water: Exposure 0.0002 mg/l, PNEC 0.0002 mg/l, RCR 1

4. Guidance to check compliance with the exposure scenario (Environment 1)

Environmental factors and days released have been scaled from the original CSR to reflect more accurate working practices. Guidance is based on assumed operating conditions which may not be applicable to all sites, thus, scaling may be necessary to define appropriate site-specific risk management measures. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

3. Exposure estimation (Health 1)

Assessment method

Used ART model. Used ECETOC TRA model.

Formulation of fragrances into end products (formulating)

Exposure

PROC3
Worker - inhalation, long-term - systemic: Exposure 0.0005 mg/m³, DNEL 0.078 mg/m³, RCR 0.006
Worker - dermal, long-term - systemic: Exposure 0.041 mg/kg/day, DNEL 18.2 mg/kg/day, RCR 0.002

PROC5
Worker - inhalation, long-term - systemic: Exposure 0.0054 mg/m³, DNEL 0.078 mg/m³, RCR 0.07
Worker - dermal, long-term - systemic: Exposure 1.64 mg/kg/day, DNEL 18.2 mg/kg/day, RCR 0.09

PROC8a
Worker - inhalation, long-term - systemic: Exposure 0.001 mg/m³, DNEL 0.078 mg/m³, RCR 0.01
Worker - dermal, long-term - systemic: Exposure 1.64 mg/kg/day, DNEL 18.2 mg/kg/day, RCR 0.09

PROC8b
Worker - inhalation, long-term - systemic: Exposure 0.0001 mg/m³, DNEL 0.078 mg/m³, RCR 0.001
Worker - dermal, long-term - systemic: Exposure 0.82 mg/kg/day, DNEL 18.2 mg/kg/day, RCR 0.05

PROC9
Worker - inhalation, long-term - systemic: Exposure 0.001 mg/m³, DNEL 0.078 mg/m³, RCR 0.01
Worker - dermal, long-term - systemic: Exposure 0.82 mg/kg/day, DNEL 18.2 mg/kg/day, RCR 0.05

PROC14
Worker - inhalation, long-term - systemic: Exposure 0.00005 mg/m³, DNEL 0.078 mg/m³, RCR <0.001
Worker - dermal, long-term - systemic: Exposure 0.17 mg/kg/day, DNEL 18.2 mg/kg/day, RCR 0.01

PROC15
Worker - inhalation, long-term - systemic: Exposure 0.0089 mg/m³, DNEL 0.078 mg/m³, RCR 0.11
Worker - dermal, long-term - systemic: Exposure 0.041 mg/kg/day, DNEL 18.2 mg/kg/day, RCR 0.002

4. Guidance to check compliance with the exposure scenario (Health 1)

Formulation of fragrances into end products (formulating)

Guidance is based on assumed operating conditions which may not be applicable to all sites, thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e. RCRs > 1), additional RMM or a site-specific chemical safety assessment is required. 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.

Exposure scenario
Industrial / Professional use of fragrance products

Identification

Product name	Hexyl Cinnamic Aldehyde
REACH registration number	01-2119533092-50-0003
CAS number	165184-98-5
EC number	639-566-4
Es reference	ES 3
Supplier	Tennants Fine Chemicals Macclesfield Road (Head Office) Leek Staffordshire ST13 8LD UK Tennants Fine Chemicals PTE Limited 163 Tras Street #03-01 Lin Huat Building Singapore (079024) +44 (0) 1538 392180 sdsadvice@tennantsfinechemicals.com

1. Title of exposure scenario

Main title	Industrial / Professional use of fragrance products
Process scope	Use of fragrance products by professional users in industrial and non-industrial settings at up to 1%. Uses include all cleaning products. Spraying
Environment	
	Wide dispersive use.
Environmental release category	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)
Worker	
	PROC7 Industrial spraying Transfer of chemicals Filling containers Use of roller or brush Treatment by dipping and pouring PROC19 Manual activities involving hand contact

Industrial / Professional use of fragrance products

Process category

PROC7 Industrial spraying
PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
PROC10 Roller application or brushing
PROC13 Treatment of articles by dipping and pouring.
PROC19 Manual activities involving hand contact

2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

Environmental release category

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)

Poor containment. Loss to waste water treatment.

Product characteristics

Physical state

Solid or Liquid

Concentration details

Concentration of substance in product: <1%

Amounts used

Fraction of Regional tonnage used locally: 1

Environmental factors not influenced by risk management measures

Other factors

Wastewater emissions generated from equipment cleaning with water.

Technical onsite conditions and measures to reduce or limit discharges to air, water and soil

Any drainage or washings, including collection of spilled material must be collected for disposal either as hazardous waste or as waste water after checking in relation to local discharge consents.

Conditions and measures related to external treatment of waste for disposal

Assumption for this use is that all material is lost to waste water.

2. Conditions of use affecting exposure (Workers - Health 1)

Control of workers exposure

Process category

PROC7 Industrial spraying
PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
PROC10 Roller application or brushing
PROC13 Treatment of articles by dipping and pouring.
PROC19 Manual activities involving hand contact

Product characteristics

Concentration details

Concentration of substance in product: <1%

Frequency and duration of use

Industrial / Professional use of fragrance products

PROC 7
Covers daily exposure up to 1hour
Low application rate (0.03 - 0.3 l/minute)

PROC 8a 8b 9 10 13
Covers daily exposure up to 8hours

PROC 19
Covers daily exposure up to 1hour

Spraying Low application rate (0.03 - 0.3 l/minute) Moderate application rate (0.3 - 3 l/minute)

Other given operational conditions affecting workers exposure

Setting Indoor/outdoor use.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Risk management measures

Use suitable eye protection.
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.

PROC 19
Gloves made from the following material may provide suitable chemical protection:
Polyvinyl chloride (PVC).
Gloves should comply with the requirements of EN 374.

3. Exposure estimation (Environment 1)

Environmental release category 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)

Quantitative assessment not reported.

3. Exposure estimation (Health 1)

Assessment method Used ART model.

Exposure PROC7
Worker - inhalation, long-term - systemic: Exposure 0.08 mg/m³, DNEL 0.078 mg/m³, RCR 1
Worker - dermal, long-term - systemic: Exposure 8.6 mg/kg/day, DNEL 18.2 mg/kg/day, RCR 0.5

PROC 8a 9 10 13 19
Considered low risk.

4. Guidance to check compliance with the exposure scenario (Health 1)

Industrial / Professional use of fragrance products

Guidance is based on assumed operating conditions which may not be applicable to all sites, thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e. RCRs > 1), additional RMM or a site-specific chemical safety assessment is required. 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.

Exposure scenario
Consumer use of fragrance products

Identification

Product name	Hexyl Cinnamic Aldehyde
REACH registration number	01-2119533092-50-0003
CAS number	165184-98-5
EC number	639-566-4
Es reference	ES 4
Supplier	Tennants Fine Chemicals Macclesfield Road (Head Office) Leek Staffordshire ST13 8LD UK Tennants Fine Chemicals PTE Limited 163 Tras Street #03-01 Lin Huat Building Singapore (079024) +44 (0) 1538 392180 sdsadvice@tennantsfinechemicals.com

1. Title of exposure scenario

Main title	Consumer use of fragrance products
Process scope	Use of fragrance products by the consumer in non-industrial settings. Uses include all cleaning products. Cosmetic use covered by Cosmetic Regulation.
Environment	
	Wide dispersive use.
Environmental release category	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)
Non-industrial	
	Cleaning products, spraying

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Control of environmental exposure (Non-industrial)

Consumer use of fragrance products

Environmental release category	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)

Product characteristics

Physical state	Liquid or Solid
Concentration details	Concentration of substance in product: <1%

Amounts used

Fraction of Regional tonnage used locally: 1

Conditions and measures related to external treatment of waste for disposal

Assumption for this use is that all material is lost to waste water.

2. Conditions of use affecting exposure (Non-industrial - Health 1)

Product characteristics

Concentration details	Concentration of substance in product: <1%

Other given operational conditions affecting Non-industrial exposure

Setting	Indoor/outdoor use.
Temperature	Assumes use at not more than 20°C above ambient temperature, unless stated differently.

3. Exposure estimation (Environment 1)

Environmental release category	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)

Quantitative assessment not reported.

3. Exposure estimation (Health 1)

Consumer exposure modelling suggests exposure to be within limits assumed by DNELs.

4. Guidance to check compliance with the exposure scenario (Health 1)

Guidance is based on assumed operating conditions which may not be applicable to all sites, thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e. RCRs > 1), additional RMM or a site-specific chemical safety assessment is required. 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.