TENNANTS DISTRIBUTION LIMITED
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PRODUCT SPECIFICATION

Product Name	Hexyl Salicylate
Specification Reference	HESA/1 (18/01/0083280)

SALES SPECIFICATION

Characteristic	Specification	Measure
Density	1.035-1.039	g/cm^3 @ 20^{o}C
Refractive Index	1.503-1.507	N 20/D
Acidity[1]	<=0.1	%
Odour	To Agreed Standard	
Assay by GC	>=99.0	%
Appearance	Clear Colourless Liquid	%

1. As Salicylic Acid

NOTES

Exclusion of Liability

Information contained in this publication is accurate to the best of the knowledge and belief of Tennants.

Any information or advice obtained from Tennants otherwise than by means of this publication and whether relating to Tennants materials or other materials, is also given in good faith. However, it remains at all times the responsibility of the customer to ensure that Tennants materials are suitable for the particular purpose intended.

Tennants accepts no liability whatsoever (except as otherwise provided by law) arising out of the use of information supplied, the application, adaptation or processing of the products described herein, the use of other materials in lieu of Tennants materials or the use of Tennants materials in conjunction with such other materials.

Health and Safety

A Material Safety Data Sheet has been issued describing the health, safety and environmental properties of this product, identifying the potential hazards and giving advice on the handling precautions and emergency procedures. This must be consulted fully before handling, storage and use.

SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

Product:

Product Name	Hexyl Salicylate
Alternative Name	2-HYDROXY HEXYL BENZOATE, BENZOIC ACID, 2-HYDROXY-, HEXYL ESTER
CAS Number	6259-76-3
EC Number	228-408-6
REACH Registration Number	01-2119638275-36-XXXX
Formula	$HOC_6H_4COOC_6H_{13}$
Molecular Weight	222.29

Use of substance/preparation
Fragrance ingredient

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2. HAZARDS IDENTIFICATION

2.1 Classification of the substance/mixture
Classification according to Regulation (EC) No 1272/2008 as amended

Physical	Not classified
Health	Skin sensitiser - H317. Skin irritancy/Cat.2 – H315
Environmental	Acute Cat 1, Chronic Cat.1 - H410

2.2. Label elements
Label according to Regulation (EC) No. 1272/2008 as amended

Signal Word: Warning
Hazard statement

H317: May cause an allergic skin reaction
H315: Causes skin irritation
H410: Very toxic to aquatic life with long lasting effects
Precautionary statements
P272: Contaminated work clothing should not be allowed out of the work place
P273: Avoid release to the environment
P280: Wear protective gloves/protective clothing/eye protection/face protection
P391: Collect spillage
P302+P352: If on skin wash with plenty of water
P332 +P313: If skin irritation occurs: get medical advice/attention
For more details see Sections 8, 11, 14 and 15

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS No.	Ingredient Name	Content (%)	EC No.
6259-76-3	Hexyl Salicylate	>98	228-408-6

There are no impurities present at a level that require to be included under CLP Regulation EC 1272/2008.

4. FIRST AID MEASURES

General information
Not available.
4.1 Description of first aid measures
Inhalation
Fresh air and rest

Skin contact
Shower immediately and remove contaminated clothing
Eye contact
Rinse continuously with water for at least 10 minutes
Ingestion
Rinse mouth with water and give small amounts of water to drink.
NEVER GIVE AN UNCONSCIOUS PATIENT WATER TO DRINK. DO NOT INDUCE VOMITING. SEEK IMMEDIATE MEDICAL ATTENTION.
Other
For all exposures seek medical advice. Show medical staff substance data sheet or ensure information accompanies patient.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media
HAZCHEM CODE (UK Only)
3Z
Use foam.
No danger of violent reaction or explosion Breathing apparatus for fire only.
Contain.
Suitable extinguishing media
CO_2, alcohol resistant foam, powder and water fog/spray.
Unsuitable extinguishing media
None known.
5.2 Special hazards arising from the substance or mixture
May emit acrid fumes if burned, use breathing apparatus.
5.3 Advice for firefighters
Special protective equipment for firefighters
Wear self-contained breathing apparatus
Special firefighting procedures
No further information

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Protective Equipment to be worn for spill – Chemical splash resistant overalls, wellingtons or boots, chemical resistant PVC gauntlets and organic vapour respirator.
6.2 Environmental precautions
Prevent runoff from entering drains, sewers, or streams.
6.3 Methods and material for containment and cleaning up
Recover materials if possible. Also absorb spilled substance in sand or inert substance and remove to a safe place. Prevent material entering drains with absorbent socks and drain protectors. After absorption and recovery, wash away traces with large amounts of water. Any absorbent material used to mop up a spill to be disposed of in a closed metal container.
6.4 Reference to other sections
For personal protection, see section 8. For waste disposal, see Section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Use in well ventilated areas. Keep containers tightly closed when not in use. Open and handle containers with care. Store in original containers. Avoid accumulation of static charge, especially in high mixing systems (low electrical conductivity see Section 9). Avoid excessive breathing of vapours. See Section 8 for recommended exposure levels. Emergency shower and eyewash should be close by. Electrical equipment to be suitable for electrical apparatus group and temperature class of the material (see Section 9).
7.2. Conditions for safe storage, including any incompatibilities
Store away from oxidising agents. **For IBCs only, store away from sunlight.** Suitable storage material – 316 Stainless Steel, avoid contact with iron as this causes pink coloration. Suitable seals - Perfluoroelastomer (Kalrez), suitable gaskets – graphite supported on 316 Stainless steel or asbestos free aramid fibre composite. Storage tanks to be bunded to contain 110% of tank contents, or as per local regulations.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters
Occupational exposure limits
There is no workplace exposure standard set in the UK by the HSE in EH40, nor in Europe nor the USA.
DNELs
Workers
Route **Type of effect**

Inhalation	Systemic – long term	7.3 mg/m^3
Inhalation	Systemic – acute	7.3 mg/m^3
Dermal	Systemic – long term	20,800 mg/kg/bw/day
Dermal	Systemic – acute	20,800 mg/kg/bw/day
Dermal	Local – acute	1475µg/cm^2
Consumers		
Route	**Type of effect**	
Inhalation	Systemic – long term	2.2 mg/m^3
Inhalation	Systemic – acute	2.2 mg/m^3
Dermal	Systemic – long term	12500 mg/kg/bw/day
Dermal	Systemic – acute	12500 mg/kg/bw/day
Dermal	Local – acute	885 µg/cm^2
Oral	Systemic – long term	0.62 mg/kg/bw/day
Oral	Systemic – acute	1.3 mg/kg/bw/day

8.2 Exposure controls

Ventilation

This product must not be used in a confined space without good ventilation. However engineering controls should be aimed for to prevent the need for ventilation.

Protective Equipment for normal operation of undiluted product (see Section 6 for spill)

Breathing

Under normal conditions respiratory protection is not required. If the exposure limit is likely to be exceeded, wear full face chemical respirator with organic vapour cartridge CEN141. See above for exposure limit information.

Protective gloves

Use protective gloves/gauntlets made of PVC

Eye protection

Wear close fitting goggles or visor when handling, e.g. sampling

Other

Wear normal industrial workwear to prevent skin contact

9. PHYSICAL AND CHEMICAL PROPERTIES

Colour	Colourless
State at 20ºC	Liquid
Odour	Faint, sweet, herbaceous and floral
Solubility in water at 20ºC (%)	2 mg/l (measured)
Solubility of water in product at 20ºC (%)	Not determined
Specific gravity at 20ºC	1.03
Evaporation rate (Butyl Acetate=1) at 20ºC	0.0006
Vapour pressure at 20ºC	0.077 Pa
Vapour density (Air=1)	7.7
Melting point	-4ºC
Boiling point	298ºC
Viscosity	10 mPas @ 20ºC
Flash point	151ºC (closed cup)
Auto ignition temperature	251ºC
Flammability limit – lower	Not determined
Flammability limit – upper	Not determined
Decomposition temperature	Not determined
Odour threshold	Not determined
Henry's law constant	0.9 Pa m^3/mol
Electrical conductivity	0.048 µS/cm
Gas group and temperature class	Group IIB Class T1
Log octanol/water partition coefficient	5.5 (measured)

10. STABILITY AND REACTIVITY

10.1 Reactivity

Reacts with strong oxidising agents.

Reaction with water: Slow hydrolysis to Hexanol and Salicylic acid

10.2 Heat stability

Stable at least up to 180ºC

10.3 Possibility of hazardous reactions

No further information

10.4 Conditions to avoid

No further information

10.5 Incompatible materials

No further information

10.6 Hazardous decomposition products

No further information

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Result/Route	Test Method	Species	Dose	Exposure	Remarks
LD50 Oral		Rat	>5000 mg/kg	-	-
LD50 Dermal		Rabbit	>5000 mg/kg	-	-

Irritation/corrosion/sensitisation

Result/Route	Test Method	Species	Dose	Exposure	Remarks
Irritation Dermal	EU B4	Rabbit	test score 2.0 – erythema & 2.2 – edema.	0.5 ml/4h	Skin irritant as residual effects seen
Irritation Eye	EU B5	Rabbit	test score cornea 0, iris 0, conjunctivae redness 0.4, chemosis	-	≥2 conjunctivae redness for CLP
Sensitisation	Local Node Lymph Assay	Mice	EC_3 =0.18%	-	Potential severe sensitiser
Sensitisation	HRIPT	Human		3% in petrolatum	Not sensitising
Sensitisation	HRIPT	Human	No Positive response	30% in DEP/Ethanol	Not sensitising

Repeated dose toxicity

Result/Route	Test Method	Species	Dose	Exposure	Remarks
NOAEL 90 day oral	OECD 408	4	47mg/kgbw/day	-	

Mutagenicity

Result/Route	Test Method	Species	Dose	Exposure	Remarks
Mutation	Mammalian Cell	Mammalian cell	Negative		
Mutation	OECD 471	Salmonella Bacteria	Negative	With & without metabolic activation	
In vitro Chromosome aberration		Hamster lung cell	Negative chromosome aberration induction.	With & without metabolic activation	
In vivo micronucleus assay	OECD 474	Mice	Negative		

Reproduction Toxicity

Result/Route	Test Method	Species	Dose	Exposure	Remarks
NOAEL 2 generation oral	OECD 416	Rat	NOAEL: 180 mg/kg bw/day	100 days	Read across from Methyl Salicylate

NOAEL 1 generation oral	OECD 415	Rat	NOAEL Parent female 180mg/kg, NOAEL Parent male 540mg/kg, NOAEL F1 180mg/kg,	-	Read across Cyclohexyl Salicylate

Developmental toxicity

Result/Route	Test Method	Species	Dose	Exposure	Remarks
NOAEL 1 generation oral	OECD 414	Rat	NOAEL 360mg/kg bw/day Maternal toxicity NOAEL 360mg/kg bw/day Terratogenicity NOAEL 360mg/kg bw/day Embryotoxicityl toxicity	-	Read across Cyclohexyl Salicylate

Information on likely routes of entry - Dermal
Potential acute health effects
Acute and chronic health hazards
Acute effects
Eye contact
Mild irritation
Skin contact
Irritation
Inhalation
Not considered as a problem due to very low vapour pressure
Ingestion
None known.
Potential chronic health effects
None
Potential Carcinogenic, Mutagenic or Reprotoxic Effects
None

12. ECOLOGICAL INFORMATION

Aquatic toxicity

Result/Route	Test Method	Species	Dose	Exposure	Remarks
LC50	OECD Test 204	Fish	1.34 mg/l geometric mean	96h	Danio rerio – read across Amyl Salicylate
EC50	OECD Test 202	Daphnia magna	0.357 mg/l	48h	-
NOEC	OECD Test 202	Daphnia magna	0.14 mg/l	48h	
EC50	OECD Test 201	Algae	0.61mg/l on growth rate	72h	Pseudokirchnerella subcapitata – read across from Cis 3-Hexenyl Salicylate
NOEC	OECD Test 201	Algae	0.15 mg/l on growth rate	72h	Pseudokirchnerella subcapitata – read across from Cis 3-Hexenyl
NOEC	OECD 301F	Activated sewage sludge	100 mg/l	12 days	

On this data, Hexyl Salicylate is classified as very toxic to aquatic life.
Predicted No Effect Concentration (PNEC) Values

Compartment Detail	Value	Method Detail
Fresh water sediment	0.27 mg/kg	Equilibrium Partitioning
Marine water sediment	0.027 mg/kg	Equilibrium Partitioning
Marine	0.036 µg/l	Assessment Factors
Fresh water	0.36 µg/l	Assessment Factors
Intermittent release	3.6 µg/l	Assessment Factors

Soil	0.054 mg/kg	Equilibrium Partitioning
Sewage Treatment Plant	10 mg/l	Assessment Factors
Secondary poisoning	No potential for bioaccumulation	Assessment Factors

Mobility
The Henry's Law Constant (from Section 9) shows that there is no clear partition between air and water. The Soil adsorption coefficient Koc has been calculated as 3000, which suggests binding to soil will be high.
Biodegradability
Test OECD 301F – Biodegradation was 91%. Biodegradation at the end of the 10 day window was 82%, so readily biodegradable.
Bioaccumulation
Bioconcentration factor has been estimated as 148 (calc BCFBAF – Epiweb EPA), which shows that bioaccumulation is just significant.
Summary
Based on the above data, it is classified as dangerous to the environment, acute category 1 & chronic category 1. M factor =1. It is neither a PBT nor a vPvB. IFRA Labelling Manual allocates this classification.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Waste product
Recycle if possible, but if not, then incineration is recommended since the material is odiferous.
Packaging
Steel drums can be cleaned and re-used if in good condition, or recycle as scrap metal. Plastic IBC bodies will pick up odour, so re-use will not be possible. Either clean out, shred and landfill, if permitted or clean, granulate and recycle the plastic granules.
Note
Incineration must be carried out in a suitable high temperature incinerator operated by a registered disposal company. User must ensure that this complies with all local /National laws.

14. TRANSPORT INFORMATION

UN No.	3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s. (Hexyl Salicylate)
Packing Group ADR/AIR/SEA	Group III Minor Danger
Class No.	9
ADR Hazard ID No.	90
Subsidiary Class No.	Not Classified
HAZCHEM	3Z
Label/Mark for Conveyance	 (ENVIRONMENTAL MARK FOR ROAD/AIR – MARINE POLLUTANT SEA)

15. REGULATORY INFORMATION

Relevant regulations
Classification, labelling and packaging of substances and mixtures Regulation EC 1272/2008, currently at 7th Adaptation Registration, Evaluation, Authorisation and restriction of Chemicals (REACH) Regulation 1907/2006 Cosmetics Regulation EC 1223/2009.
Listed on the following Inventories:- TSCA (USA), DSL (Canada), EINECS (Europe), AICS (Australia), ECL (Korea), PICCS (Philippines), ENCS & ISHL (Japan), NZIoC (New Zealand), ASIA-PAC & IECSC (China)

NFPA Rating Codes (US) Health – 1, Flammability – 1, Reactivity – 0.

16. OTHER INFORMATION

Modification from previous issue
First Issue
Revision Date: 10/01/18