SAFETY DATA SHEET

Deltamethrin (with Xylene) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 2024/09/28
10.0	2025/04/14	2972472-00019	Date of first issue: 2018/07/02

1. PRODUCT AND COMPANY IDENTIFICATION

Chemical product name : Deltamethrin (with Xylene) Formulation

Supplier's company name, address and phone number

Company name of supplier : MSD

Address : 1-13-12, Kudan-kita, Chiyoda-ku, Tokyo, Japan

Telephone : 03-6272-1099

E-mail address : EHSDATASTEWARD@msd.com

Emergency telephone number : +1-908-423-6000

Recommended use of the chemical and restrictions on use

Recommended use : Veterinary product

Restrictions on use : Not applicable

2. HAZARDS IDENTIFICATION

GHS classification of chemical product

Flammable liquids : Category 3

Acute toxicity (Oral) : Category 4

Skin corrosion/irritation : Category 2

Serious eye damage/eye irritation : Category 2A

Skin sensitisation : Category 1

Germ cell mutagenicity : Category 1B

Carcinogenicity : Category 1B

Reproductive toxicity : Category 2

Specific target organ toxicity - single exposure : Category 3

Specific target organ toxicity - repeated exposure : Category 2 (Systemic toxicity)

Aspiration hazard : Category 1

Short-term (acute) aquatic hazard	:	Category 1
Long-term (chronic) aquatic hazard	:	Category 1

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements :

H226 Flammable liquid and vapour.
H302 Harmful if swallowed.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H340 May cause genetic defects.
H350 May cause cancer.
H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.
H373 May cause damage to organs (Systemic toxicity) through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P241 Use explosion-proof electrical/ ventilating/ lighting equipment.
P242 Use non-sparking tools.
P243 Take action to prevent static discharges.
P260 Do not breathe mist or vapours.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
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.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON

CENTER/ doctor.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P331 Do NOT induce vomiting.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P391 Collect spillage.

Storage:

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

Disposal:

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

Other hazards which do not result in classification

Important symptoms and outlines of the emergency assumed : Cutaneous sensations may occur, such as burning or stinging on the face and mucosae. However, these sensations cause no lesions and are of a transitory nature (max. 24 hours).
Vapours may form explosive mixture with air.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)	ENCS No.
Ethylbenzene	100-41-4	39	3-28
Xylene	1330-20-7	37	3-3, 3-60
4-Nonylphenol, branched, ethoxylated	127087-87-0	11	7-172
deltamethrin (ISO)	52918-63-5	>= 3 - < 10	
2,6-Di-tert-butyl-p-cresol	128-37-0	4.8	3-540, 9-1805
Solvent naphtha (petroleum), light aromatic	64742-95-6	>= 0.25 - < 1	9-1700

Methanol	67-56-1	0.35	2-201

4. FIRST AID MEASURES

General advice	:	In the case of accident or if you feel unwell, seek medical advice immediately. When symptoms persist or in all cases of doubt seek medical advice.
If inhaled	:	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
In case of skin contact	:	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.
In case of eye contact	:	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lens, if worn. Get medical attention.
If swallowed	:	If swallowed, DO NOT induce vomiting. If vomiting occurs have person lean forward. Call a physician or poison control centre immediately. Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person.
Most important symptoms and effects, both acute and delayed	:	This product contains a pyrethroid. Pyrethroid poisoning should not be confused with carbamate or organophosphate poisoning. Harmful if swallowed. May be fatal if swallowed and enters airways. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May cause respiratory irritation. May cause genetic defects. May cause cancer. Suspected of damaging fertility. Suspected of damaging the unborn child. May cause damage to organs through prolonged or repeated exposure.
Protection of first-aiders	:	First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8).
Notes to physician	:	Treat symptomatically and supportively.

5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Water spray Alcohol-resistant foam

		Carbon dioxide (CO2) Dry chemical
Unsuitable extinguishing media	:	High volume water jet
Specific hazards during fire-fighting	:	Do not use a solid water stream as it may scatter and spread fire. Flash back possible over considerable distance. Vapours may form explosive mixtures with air. Exposure to combustion products may be a hazard to health.
Hazardous combustion products	:	Carbon oxides Nitrogen oxides (NOx) Bromine compounds
Specific extinguishing methods	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.
Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Remove all sources of ignition. Use personal protective equipment. Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).
Environmental precautions	:	Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g. by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up	:	Non-sparking tools should be used. Soak up with inert absorbent material. Suppress (knock down) gases/vapours/mists with a water spray jet. For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent. Local or national regulations may apply to releases and dis-

posal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

7. HANDLING AND STORAGE

Handling

Technical measures	:	See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
Local/Total ventilation	:	If sufficient ventilation is unavailable, use with local exhaust ventilation. Use explosion-proof electrical, ventilating and lighting equipment.
Advice on safe handling	:	Do not get on skin or clothing. Do not breathe mist or vapours. Do not swallow. Do not get in eyes. Wash skin thoroughly after handling. Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment Non-sparking tools should be used. Keep container tightly closed. Already sensitised individuals, and those susceptible to asthma, allergies, chronic or recurrent respiratory disease, should consult their physician regarding working with respiratory irritants or sensitisers. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharges. Do not eat, drink or smoke when using this product. Take care to prevent spills, waste and minimize release to the environment.
Avoidance of contact	:	Oxidizing agents
Hygiene measures	:	If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before re-use. The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the use of administrative controls.

Storage

Conditions for safe storage	:	Keep in properly labelled containers.

		Store locked up. Keep tightly closed. Keep in a cool, well-ventilated place. Store in accordance with the particular national regulations. Keep away from heat and sources of ignition.
Materials to avoid	:	Do not store with the following product types: Oxidizing solids Oxidizing liquids
Packaging material	:	Unsuitable material: None known.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Threshold limit value and permissible exposure limits for each component in the work environment

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Concentration standard / Permissible concentration	Basis
Ethylbenzene	100-41-4	ACL	20 ppm	JP OEL ISHL
		OEL-M	20 ppm 87 mg/m3	JP OEL JSOH
	Further information: Group 2: Substances presumed to cause reproductive toxicity in humans, Skin absorption, Group 2B: possibly carcinogenic to humans			
		TWA	20 ppm	ACGIH
Xylene	1330-20-7	ACL	50 ppm	JP OEL ISHL
		OEL-M	50 ppm 217 mg/m3	JP OEL JSOH
	Further information: Group 3: Substances suspected to cause reproductive toxicity in humans			
		TWA	20 ppm	ACGIH
deltamethrin (ISO)	52918-63-5	TWA	15 µg/m3 (OEB 3)	Internal
	Further information: DSEN, Skin			
		Wipe limit	100 µg/100 cm²	Internal
2,6-Di-tert-butyl-p-cresol	128-37-0	8h-OEL-M	10 mg/m3	JP ISHL OEL 577-2(2)
		TWA (Inhalable fraction and vapor)	2 mg/m3	ACGIH
Solvent naphtha (petroleum), light aromatic	64742-95-6	TWA	200 mg/m3 (total hydrocarbon vapor)	ACGIH
Methanol	67-56-1	ACL	200 ppm	JP OEL ISHL
		OEL-M	200 ppm 260 mg/m3	JP OEL JSOH
	Further information: Group 2: Substances presumed to cause reproductive toxicity in humans, Skin absorption			
		TWA	200 ppm	ACGIH

		STEL	250 ppm	ACGIH

Biological occupational exposure limits

Components	CAS-No.	Target substance	Biological specimen	Sampling time	Permissible concentration	Basis
Ethylbenzene	100-41-4	Mandelic acid	Urine	End of shift	150 mg/g creatinine	JSOH
		Mandelic acid + Phenylglyoxylic acid	Urine	End of shift at end of workweek	200 mg/g creatinine	JSOH
		Ethylbenzene	Urine	End of shift	15 µg/l	JSOH
		Sum of mandelic acid and phenyl glyoxylic acid	Urine	End of shift (As soon as possible after exposure ceases)	150 mg/g creatinine	ACGIH BEI
Xylene	1330-20-7	total (o-, m-, p-)methylhippuric acid	Urine	End of shift at end of workweek	800 mg/l	JSOH
		Methylhippuric acids	Urine	End of shift (As soon as possible after exposure ceases)	0.3 g/g creatinine	ACGIH BEI
Methanol	67-56-1	Methanol	Urine	End of shift	20 mg/l	JSOH
		Methanol	Urine	End of shift (As soon as possible after exposure ceases)	15 mg/l	ACGIH BEI

Engineering measures : Use appropriate engineering controls and manufacturing technologies to control airborne concentrations (e.g., dripless quick connections).
All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment.
Containment technologies suitable for controlling compounds

are required to control at source and to prevent migration of the compound to uncontrolled areas (e.g., open-face containment devices).
Minimize open handling.

Use explosion-proof electrical, ventilating and lighting equipment.

Personal protective equipment

Respiratory protection : If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.

Filter type : Combined particulates and organic vapour type

Hand protection

Material : Chemical-resistant gloves

Remarks : Consider double gloving. Take note that the product is flammable, which may impact the selection of hand protection.
Impermeable protective gloves

Eye protection : Wear safety glasses with side shields or goggles.
If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate goggles.
Wear a faceshield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or aerosols.

Skin and body protection : Work uniform or laboratory coat.
Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable suits) to avoid exposed skin surfaces.
Use appropriate degowning techniques to remove potentially contaminated clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	:	liquid
Colour	:	clear yellow
Odour	:	No data available
Odour Threshold	:	No data available
Melting point/freezing point	:	No data available
Boiling point, initial boiling point and boiling range	:	No data available
Flammability (solid, gas)	:	Not applicable

Flammability (liquids)	:	Not applicable
Lower explosion limit and upper explosion limit / flammability limit		
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Flash point	:	38 °C
Decomposition temperature	:	No data available
pH	:	No data available
Evaporation rate	:	No data available
Auto-ignition temperature	:	No data available
Viscosity		
Viscosity, kinematic	:	No data available
Solubility(ies)		
Water solubility	:	No data available
Partition coefficient: n-octanol/water	:	Not applicable
Vapour pressure	:	No data available
Density and / or relative density		
Relative density	:	No data available
Density	:	No data available
Relative vapour density	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Molecular weight	:	No data available
Particle characteristics		
Particle size	:	Not applicable

10. STABILITY AND REACTIVITY

Reactivity	:	Not classified as a reactivity hazard.

Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Flammable liquid and vapour. Vapours may form explosive mixture with air. Can react with strong oxidizing agents.
Conditions to avoid	:	Heat, flames and sparks.
Incompatible materials	:	Oxidizing agents
Hazardous decomposition products	:	No hazardous decomposition products are known.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	:	Inhalation Skin contact Ingestion Eye contact

Acute toxicity

Harmful if swallowed.

Product:

Acute oral toxicity	:	Acute toxicity estimate: 1,314 mg/kg Method: Calculation method
Acute inhalation toxicity	:	Acute toxicity estimate: > 20 mg/l Exposure time: 4 h Test atmosphere: vapour Method: Calculation method
Acute dermal toxicity	:	Acute toxicity estimate: > 2,000 mg/kg Method: Calculation method

Components:

Ethylbenzene:

Acute oral toxicity	:	LD50 (Rat): 3,500 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): 17.8 mg/l Exposure time: 4 h Test atmosphere: vapour
Acute dermal toxicity	:	LD50 (Rabbit): > 5,000 mg/kg

Xylene:

Acute oral toxicity	:	LD50 (Rat): 3,523 mg/kg Method: Directive 67/548/EEC, Annex V, B.1.
Acute inhalation toxicity	:	LC50 (Rat): 27.571 mg/l Exposure time: 4 h Test atmosphere: vapour

Acute dermal toxicity	:	LD50 (Rabbit): > 4,200 mg/kg

4-Nonylphenol, branched, ethoxylated:

Acute oral toxicity	:	LD50 (Rat): > 2,000 mg/kg Remarks: Based on data from similar materials
Acute dermal toxicity	:	LD50 (Rabbit): > 2,000 mg/kg Remarks: Based on data from similar materials

deltamethrin (ISO):

Acute oral toxicity	:	LD50 (Rat): 66.7 mg/kg LD50 (Rat): 9 - 139 mg/kg LD50 (Mouse): 19 - 34 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): 0.8 mg/l Exposure time: 2 h Test atmosphere: dust/mist
Acute dermal toxicity	:	LD50 (Rabbit): 2,000 mg/kg LD50 (Rat): > 800 mg/kg
Acute toxicity (other routes of administration)	:	LD50 (Rat): 2.5 mg/kg Application Route: Intravenous LD50 (Mouse): 10 mg/kg Application Route: Intraperitoneal

2,6-Di-tert-butyl-p-cresol:

Acute oral toxicity	:	LD50 (Rat): > 6,000 mg/kg Method: OECD Test Guideline 401
Acute dermal toxicity	:	LD50 (Rat): > 2,000 mg/kg Method: OECD Test Guideline 402 Assessment: The substance or mixture has no acute dermal toxicity

Solvent naphtha (petroleum), light aromatic:

Acute oral toxicity	:	LD50 (Rat): > 5,000 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): > 5.61 mg/l Exposure time: 4 h Test atmosphere: vapour
Acute dermal toxicity	:	LD50 (Rabbit): > 2,000 mg/kg

Methanol:

Acute oral toxicity	:	Acute toxicity estimate (Humans): 300 mg/kg Method: Expert judgement
Acute inhalation toxicity	:	Acute toxicity estimate: 3 mg/l Exposure time: 4 h Test atmosphere: vapour Method: Expert judgement Remarks: Based on national or regional regulation.
Acute dermal toxicity	:	Acute toxicity estimate: 300 mg/kg Method: Expert judgement Remarks: Based on national or regional regulation.

Skin corrosion/irritation

Causes skin irritation.

Components:

Xylene:

Species	:	Rabbit
Result	:	Skin irritation

deltamethrin (ISO):

Species	:	Rabbit
Result	:	No skin irritation

2,6-Di-tert-butyl-p-cresol:

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	No skin irritation
Remarks	:	Based on data from similar materials

Solvent naphtha (petroleum), light aromatic:

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	Skin irritation

Methanol:

Species	:	Rabbit
Result	:	No skin irritation

Serious eye damage/eye irritation

Causes serious eye irritation.

Components:

Xylene:

Species	:	Rabbit
Result	:	Irritation to eyes, reversing within 21 days

deltamethrin (ISO):

Species	:	Rabbit
Result	:	Moderate eye irritation

2,6-Di-tert-butyl-p-cresol:

Species	:	Rabbit
Result	:	No eye irritation
Method	:	OECD Test Guideline 405
Remarks	:	Based on data from similar materials

Solvent naphtha (petroleum), light aromatic:

Species	:	Rabbit
Result	:	No eye irritation
Method	:	OECD Test Guideline 405

Methanol:

Species	:	Rabbit
Result	:	No eye irritation

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

Not classified based on available information.

Components:

Xylene:

Test Type	:	Local lymph node assay (LLNA)
Exposure routes	:	Skin contact
Species	:	Mouse
Result	:	negative

4-Nonylphenol, branched, ethoxylated:

Test Type	:	Human repeat insult patch test (HRIPT)
Exposure routes	:	Skin contact
Species	:	Humans
Result	:	negative
Remarks	:	Based on data from similar materials

deltamethrin (ISO):

Test Type	:	Maximisation Test
Exposure routes	:	Dermal
Species	:	Guinea pig
Result	:	negative

Test Type	:	Human repeat insult patch test (HRIPT)
Exposure routes	:	Dermal
Species	:	Humans
Result	:	positive

2,6-Di-tert-butyl-p-cresol:

Test Type	:	Human repeat insult patch test (HRIPT)
Exposure routes	:	Skin contact
Species	:	Humans
Result	:	negative

Solvent naphtha (petroleum), light aromatic:

Test Type	:	Buehler Test
Exposure routes	:	Skin contact
Species	:	Guinea pig
Result	:	negative

Methanol:

Test Type	:	Maximisation Test
Exposure routes	:	Skin contact
Species	:	Guinea pig
Result	:	negative

Germ cell mutagenicity

May cause genetic defects.

Components:

Ethylbenzene:

Genotoxicity in vitro	:	Test Type: Bacterial reverse mutation assay (AMES) Result: negative Test Type: In vitro mammalian cell gene mutation test Method: OECD Test Guideline 476 Result: negative Test Type: Chromosome aberration test in vitro Result: negative
Genotoxicity in vivo	:	Test Type: Unscheduled DNA synthesis (UDS) test with mammalian liver cells in vivo Species: Mouse Application Route: Inhalation Method: OECD Test Guideline 486 Result: negative

Xylene:

Genotoxicity in vitro	:	Test Type: Bacterial reverse mutation assay (AMES)

		Result: negative Test Type: Chromosome aberration test in vitro Result: negative Test Type: In vitro mammalian cell gene mutation test Result: negative Test Type: In vitro sister chromatid exchange assay in mammalian cells Result: negative
Genotoxicity in vivo	:	Test Type: Rodent dominant lethal test (germ cell) (in vivo) Species: Mouse Application Route: Skin contact Result: negative

deltamethrin (ISO):

Genotoxicity in vitro	:	Test Type: Bacterial reverse mutation assay (AMES) Result: negative Test Type: DNA Repair Test system: Escherichia coli Result: negative Test Type: Chromosomal aberration Test system: Chinese hamster ovary cells Result: negative Test Type: In vitro mammalian cell gene mutation test Test system: Chinese hamster lung cells Concentration: LOAEL: 20 mg/kg Result: positive
Genotoxicity in vivo	:	Test Type: Micronucleus test Species: Mouse Application Route: Oral Result: negative Test Type: dominant lethal test Species: Mouse Application Route: Oral Result: negative Test Type: sister chromatid exchange assay Species: Mouse Cell type: Bone marrow Application Route: Oral Result: negative

2,6-Di-tert-butyl-p-cresol:

Genotoxicity in vitro	:	Test Type: Bacterial reverse mutation assay (AMES) Result: negative Test Type: In vitro mammalian cell gene mutation test Result: negative Test Type: Chromosome aberration test in vitro Result: negative
Genotoxicity in vivo	:	Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis) Species: Rat Application Route: Ingestion Result: negative

Solvent naphtha (petroleum), light aromatic:

Genotoxicity in vitro	:	Test Type: Bacterial reverse mutation assay (AMES) Result: negative Test Type: In vitro mammalian cell gene mutation test Result: positive
Genotoxicity in vivo	:	Test Type: Sister chromatid exchange analysis in spermatogonia Species: Mouse Application Route: Intraperitoneal injection Result: positive
Germ cell mutagenicity - Assessment	:	Positive result(s) from in vivo heritable germ cell mutagenicity tests in mammals

Methanol:

Genotoxicity in vitro	:	Test Type: Bacterial reverse mutation assay (AMES) Method: OECD Test Guideline 471 Result: negative Test Type: In vitro mammalian cell gene mutation test Result: negative Test Type: in vitro micronucleus test Result: negative
Genotoxicity in vivo	:	Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) Species: Mouse Application Route: Intraperitoneal injection Result: negative

Carcinogenicity

May cause cancer.

Components:

Ethylbenzene:

Species	:	Rat
Application Route	:	inhalation (vapour)
Exposure time	:	104 weeks
Result	:	positive
Remarks	:	The mechanism or mode of action may not be relevant in humans.

Xylene:

Species	:	Rat
Application Route	:	Ingestion
Exposure time	:	103 weeks
Result	:	negative

deltamethrin (ISO):

Species	:	Mouse, male and female
Application Route	:	oral (feed)
Exposure time	:	104 weeks
NOAEL	:	8 mg/kg body weight
LOAEL	:	4 mg/kg body weight
Result	:	positive
Target Organs	:	Lymph nodes

Species	:	Rat, male and female
Application Route	:	oral (feed)
Exposure time	:	2 Years
Result	:	negative

Species	:	Dog, male and female
Application Route	:	oral (feed)
Exposure time	:	2 Years
NOAEL	:	1 mg/kg body weight
Result	:	negative

2,6-Di-tert-butyl-p-cresol:

Species	:	Rat
Application Route	:	Ingestion
Exposure time	:	22 Months
Result	:	negative

Solvent naphtha (petroleum), light aromatic:

Species	:	Mouse
Application Route	:	Skin contact
Exposure time	:	2 Years
Result	:	positive

Carcinogenicity - Assess-	:	Sufficient evidence of carcinogenicity in animal experiments

ment

Methanol:

Species	:	Monkey
Application Route	:	inhalation (vapour)
Exposure time	:	7 Months
Result	:	negative

Reproductive toxicity

Suspected of damaging fertility. Suspected of damaging the unborn child.

Components:

Ethylbenzene:

Effects on fertility	:	Test Type: Two-generation reproduction toxicity study Species: Rat Application Route: inhalation (vapour) Method: OECD Test Guideline 416 Result: negative
Effects on foetal development	:	Test Type: Embryo-foetal development Species: Rat Application Route: Inhalation Method: OECD Test Guideline 414 Result: negative

Xylene:

Effects on fertility	:	Test Type: One-generation reproduction toxicity study Species: Rat Application Route: inhalation (vapour) Result: negative
Effects on foetal development	:	Test Type: Embryo-foetal development Species: Rat Application Route: inhalation (vapour) Result: negative

deltamethrin (ISO):

Effects on fertility	:	Test Type: Three-generation reproduction toxicity study Species: Rat Application Route: oral (feed) Early Embryonic Development: NOAEL: 50 mg/kg body weight Symptoms: No effects on fertility, Embryo-foetal toxicity Remarks: Significant toxicity observed in testing Test Type: Two-generation reproduction toxicity study Species: Rat Application Route: Oral Early Embryonic Development: LOAEL: 84 - 149 mg/kg body weight

		Symptoms: No effects on fertility, Embryo-foetal toxicity Test Type: Fertility Species: Rat, male Application Route: Oral Fertility: LOAEL: 1 mg/kg body weight Symptoms: Effects on fertility Target Organs: Testes
Effects on foetal development	:	Test Type: Development Species: Mouse Application Route: oral (gavage) Developmental Toxicity: LOAEL: 1 mg/kg body weight Result: Skeletal malformations Remarks: Maternal toxicity observed. Test Type: Development Species: Rat, female Developmental Toxicity: NOAEL: 10 mg/kg body weight Symptoms: No effects on foetal development Test Type: Development Species: Rabbit, female Application Route: oral (gavage) Developmental Toxicity: NOAEL: 16 mg/kg body weight Symptoms: No effects on foetal development
Reproductive toxicity - Assessment	:	Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

2,6-Di-tert-butyl-p-cresol:

Effects on fertility	:	Test Type: Two-generation reproduction toxicity study Species: Rat Application Route: Ingestion Result: negative
Effects on foetal development	:	Test Type: Embryo-foetal development Species: Rat Application Route: Ingestion Result: negative

Solvent naphtha (petroleum), light aromatic:

Effects on fertility	:	Test Type: Reproduction/Developmental toxicity screening test Species: Rat Application Route: inhalation (vapour) Result: negative
Effects on foetal development	:	Test Type: Embryo-foetal development Species: Rat Application Route: inhalation (vapour)

Result: negative

Methanol:

Effects on fertility	:	Test Type: One-generation reproduction toxicity study Species: Monkey Application Route: inhalation (vapour) Result: negative
Effects on foetal development	:	Test Type: Reproduction/Developmental toxicity screening test Species: Monkey Application Route: inhalation (vapour) Result: negative

STOT - single exposure

May cause respiratory irritation.

Components:

Xylene:

Assessment	:	May cause respiratory irritation.

deltamethrin (ISO):

Assessment	:	May cause respiratory irritation.

Solvent naphtha (petroleum), light aromatic:

Assessment	:	May cause drowsiness or dizziness.

Methanol:

Target Organs	:	optic nerve, Central nervous system
Assessment	:	Causes damage to organs.

STOT - repeated exposure

May cause damage to organs (Systemic toxicity) through prolonged or repeated exposure.

Components:

Ethylbenzene:

Exposure routes	:	inhalation (vapour)
Target Organs	:	Auditory system
Assessment	:	Shown to produce significant health effects in animals at concentrations of >0.2 to 1 mg/l/6h/d.

Xylene:

Exposure routes	:	inhalation (vapour)
Target Organs	:	Auditory system
Assessment	:	Shown to produce significant health effects in animals at concentrations of >0.2 to 1 mg/l/6h/d.

deltamethrin (ISO):

Exposure routes	:	Ingestion
Target Organs	:	Central nervous system, Immune system
Assessment	:	Causes damage to organs through prolonged or repeated exposure.

Exposure routes	:	inhalation (dust/mist/fume)
Target Organs	:	Central nervous system
Assessment	:	Causes damage to organs through prolonged or repeated exposure.

2,6-Di-tert-butyl-p-cresol:

Assessment	:	No significant health effects observed in animals at concentrations of 100 mg/kg bw or less.

Repeated dose toxicity

Components:

Ethylbenzene:

Species	:	Rat
LOAEL	:	0.868 mg/l
Application Route	:	inhalation (vapour)
Exposure time	:	13 Weeks

Species	:	Rat
NOAEL	:	75 mg/kg
LOAEL	:	250 mg/kg
Application Route	:	Ingestion
Method	:	OECD Test Guideline 408

Xylene:

Species	:	Rat
LOAEL	:	> 0.2 - 1 mg/l
Application Route	:	inhalation (vapour)
Exposure time	:	13 Weeks
Remarks	:	Based on data from similar materials

Species	:	Rat
LOAEL	:	150 mg/kg
Application Route	:	Ingestion
Exposure time	:	90 Days

4-Nonylphenol, branched, ethoxylated:

Species	:	Rat
NOAEL	:	> 100 mg/kg
Application Route	:	Ingestion
Exposure time	:	90 Days

Remarks	:	Based on data from similar materials

deltamethrin (ISO):

Species	:	Rat, male and female
NOAEL	:	1 mg/kg
LOAEL	:	2.5 mg/kg
Application Route	:	Oral
Exposure time	:	13 Weeks
Target Organs	:	Nervous system
Symptoms	:	hyperexcitability

Species	:	Rat
LOAEL	:	3 mg/m3
Application Route	:	inhalation (dust/mist/fume)
Exposure time	:	2 wk / 5 d/wk / 6 h/d
Symptoms	:	Local irritation, respiratory tract irritation

Species	:	Dog
NOAEL	:	0.1 mg/kg
LOAEL	:	1 mg/kg
Application Route	:	Oral
Exposure time	:	13 Weeks
Target Organs	:	Nervous system
Symptoms	:	Dilatation of the pupil, Vomiting, Tremors, Diarrhoea, Salivation

Species	:	Rat
NOAEL	:	14 mg/kg
LOAEL	:	54 mg/kg
Application Route	:	Oral
Exposure time	:	91 d
Target Organs	:	Nervous system

Species	:	Mouse
LOAEL	:	6 mg/kg
Application Route	:	Oral
Exposure time	:	12 Weeks
Target Organs	:	Immune system
Symptoms	:	immune system effects

2,6-Di-tert-butyl-p-cresol:

Species	:	Rat
NOAEL	:	25 mg/kg
Application Route	:	Ingestion
Exposure time	:	22 Months

Solvent naphtha (petroleum), light aromatic:

Species	:	Rat
LOAEL	:	500 mg/kg
Application Route	:	Ingestion

Exposure time	:	28 Days

Aspiration toxicity

May be fatal if swallowed and enters airways.

Components:

Ethylbenzene:

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

Xylene:

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

Solvent naphtha (petroleum), light aromatic:

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

Experience with human exposure

Components:

deltamethrin (ISO):

Inhalation	:	Symptoms: respiratory tract irritation, Dizziness, Sweating, Headache, Nausea, Vomiting, anorexia, Fatigue, tingling, Palpitation, Blurred vision, muscle twitching
Skin contact	:	Symptoms: Skin irritation, Erythema, pruritis, Headache, Nausea, Vomiting, Dizziness, tingling, Sweating, muscle twitching, Blurred vision, Fatigue, anorexia, Allergic reactions
Ingestion	:	Symptoms: muscle pain, Small pupils

12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Ethylbenzene:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 4.2 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 1.8 - 2.4 mg/l Exposure time: 48 h
Toxicity to algae/aquatic	:	EC50 (Pseudokirchneriella subcapitata (green algae)): 3.6

plants		mg/l Exposure time: 96 h NOEC (Pseudokirchneriella subcapitata (green algae)): 3.4 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Ceriodaphnia dubia (water flea)): 0.96 mg/l Exposure time: 7 d
Toxicity to microorganisms	:	EC50 (Nitrosomonas sp.): 96 mg/l Exposure time: 24 h

Xylene:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 13.5 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 1 - 10 mg/l Exposure time: 24 h Method: OECD Test Guideline 202 Remarks: Based on data from similar materials
Toxicity to algae/aquatic plants	:	EC50 (Skeletonema costatum (marine diatom)): 10 mg/l Exposure time: 72 h
Toxicity to fish (Chronic toxicity)	:	NOEC (Danio rerio (zebra fish)): > 0.1 - < 1 mg/l Exposure time: 35 d Method: OECD Test Guideline 210 Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	EL10 (Daphnia magna (Water flea)): > 1 - 10 mg/l Exposure time: 21 d Method: OECD Test Guideline 211 Remarks: Based on data from similar materials
Toxicity to microorganisms	:	NOEC: > 100 mg/l Exposure time: 3 h Method: OECD Test Guideline 209 Remarks: Based on data from similar materials

4-Nonylphenol, branched, ethoxylated:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): > 0.1 - 1 mg/l Exposure time: 96 h Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 0.1 - 1 mg/l Exposure time: 48 h Method: ISO 6341 Remarks: The test was conducted according to guideline Based on data from similar materials

Toxicity to algae/aquatic plants	:	ErC50 (Raphidocelis subcapitata (freshwater green alga)): > 1 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: The test was conducted according to guideline Based on data from similar materials NOEC (Raphidocelis subcapitata (freshwater green alga)): > 1 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: The test was conducted according to guideline Based on data from similar materials
M-Factor (Acute aquatic toxicity)	:	1
Toxicity to fish (Chronic toxicity)	:	NOEC (Oryzias latipes (Japanese medaka)): > 0.1 - 1 mg/l Exposure time: 100 d Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Mysidopsis bahia (opossum shrimp)): > 0.001 - 0.01 mg/l Exposure time: 28 d Remarks: Based on data from similar materials
M-Factor (Chronic aquatic toxicity)	:	10
Toxicity to microorganisms	:	EC10 (activated sludge): > 1 mg/l Exposure time: 3 h Method: OECD Test Guideline 209 Remarks: The test was conducted according to guideline Based on data from similar materials

deltamethrin (ISO):

Toxicity to fish	:	LC50 (Cyprinodon variegatus (sheepshead minnow)): 0.00048 mg/l Exposure time: 96 h LC50 (Oncorhynchus mykiss (rainbow trout)): 0.00039 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Mysidopsis bahia (opossum shrimp)): 0.0037 µg/l Exposure time: 48 h EC50 (Daphnia magna (Water flea)): 0.0035 mg/l Exposure time: 48 h LC50 (Gammarus fasciatus (freshwater shrimp)): 0.0003 µg/l Exposure time: 96 h
Toxicity to algae/aquatic plants	:	EC50 (Pseudokirchneriella subcapitata (green algae)): > 9.1 mg/l

		Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: No toxicity at the limit of solubility
M-Factor (Acute aquatic toxicity)	:	1,000,000
Toxicity to fish (Chronic toxicity)	:	NOEC (Pimephales promelas (fathead minnow)): 0.000022 mg/l Exposure time: 36 d NOEC (Pimephales promelas (fathead minnow)): 0.000017 mg/l Exposure time: 260 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 0.0041 µg/l Exposure time: 21 d
M-Factor (Chronic aquatic toxicity)	:	1,000,000

2,6-Di-tert-butyl-p-cresol:

Toxicity to fish	:	LC50 (Danio rerio (zebra fish)): > 0.57 mg/l Exposure time: 96 h Method: Directive 67/548/EEC, Annex V, C.1.
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0.48 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): > 0.24 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 NOEC (Pseudokirchneriella subcapitata (green algae)): 0.24 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
M-Factor (Acute aquatic toxicity)	:	1
Toxicity to fish (Chronic toxicity)	:	NOEC (Oryzias latipes (Japanese medaka)): 0.053 mg/l Exposure time: 30 d Method: OECD Test Guideline 210
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 0.316 mg/l Exposure time: 21 d
M-Factor (Chronic aquatic toxicity)	:	1
Toxicity to microorganisms	:	EC50: > 10,000 mg/l Exposure time: 3 h Method: OECD Test Guideline 209

Solvent naphtha (petroleum), light aromatic:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 8.2 mg/l Exposure time: 96 h Test substance: Water Accommodated Fraction
Toxicity to daphnia and other aquatic invertebrates	:	EL50 (Daphnia magna (Water flea)): 4.5 mg/l Exposure time: 48 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	EL50 (Pseudokirchneriella subcapitata (microalgae)): 3.1 mg/l Exposure time: 96 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 201 NOELR (Pseudokirchneriella subcapitata (microalgae)): 0.5 mg/l Exposure time: 96 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 201
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOELR (Daphnia magna (Water flea)): 2.6 mg/l Exposure time: 21 d Test substance: Water Accommodated Fraction Method: OECD Test Guideline 211

Methanol:

Toxicity to fish	:	LC50 (Lepomis macrochirus (Bluegill sunfish)): 15,400 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 10,000 mg/l Exposure time: 48 h Method: DIN 38412
Toxicity to algae/aquatic plants	:	ErC50 (Raphidocelis subcapitata (freshwater green alga)): 22,000 mg/l Exposure time: 96 h Method: OECD Test Guideline 201
Toxicity to microorganisms	:	EC50 (activated sludge): > 1,000 mg/l Exposure time: 3 h Test substance: Neutralised product Method: OECD Test Guideline 209

Persistence and degradability

Components:

Ethylbenzene:

Biodegradability	:	Result: Readily biodegradable.

		Biodegradation: 70 - 80 % Exposure time: 28 d

Xylene:

Biodegradability	:	Result: Readily biodegradable. Biodegradation: > 70 % Exposure time: 28 d Method: OECD Test Guideline 301F Remarks: Based on data from similar materials

4-Nonylphenol, branched, ethoxylated:

Biodegradability	:	Result: Not readily biodegradable. Remarks: Based on data from similar materials

deltamethrin (ISO):

Stability in water	:	Hydrolysis: 0 %(30 d)

2,6-Di-tert-butyl-p-cresol:

Biodegradability	:	Result: Not readily biodegradable. Biodegradation: 4.5 % Exposure time: 28 d Method: OECD Test Guideline 301C

Solvent naphtha (petroleum), light aromatic:

Biodegradability	:	Result: Inherently biodegradable. Biodegradation: 94 % Exposure time: 25 d

Methanol:

Biodegradability	:	Result: Readily biodegradable. Biodegradation: 95 % Exposure time: 20 d

Bioaccumulative potential

Components:

Ethylbenzene:

Partition coefficient: n-octanol/water	:	log Pow: 3.6

Xylene:

Partition coefficient: n-octanol/water	:	log Pow: 3.16 Remarks: Calculation

4-Nonylphenol, branched, ethoxylated:

Partition coefficient: n-	:	log Pow: < 4

octanol/water		Remarks: Calculation

deltamethrin (ISO):

Bioaccumulation	:	Species: Lepomis macrochirus (Bluegill sunfish) Bioconcentration factor (BCF): 1,800
Partition coefficient: n-octanol/water	:	log Pow: 4.6

2,6-Di-tert-butyl-p-cresol:

Bioaccumulation	:	Species: Cyprinus carpio (Carp) Bioconcentration factor (BCF): 330 - 1,800
Partition coefficient: n-octanol/water	:	log Pow: 5.1

Methanol:

Bioaccumulation	:	Species: Leuciscus idus (Golden orfe) Bioconcentration factor (BCF): < 10
Partition coefficient: n-octanol/water	:	log Pow: -0.77

Mobility in soil

Components:

deltamethrin (ISO):

Distribution among environmental compartments	:	log Koc: 7.2

Hazardous to the ozone layer

Not applicable

Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	Dispose of in accordance with local regulations. Do not dispose of waste into sewer.
Contaminated packaging	:	Empty containers should be taken to an approved waste handling site for recycling or disposal. Empty containers retain residue and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury and/or death. If not otherwise specified: Dispose of as unused product.

14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number	:	UN 1992
Proper shipping name	:	FLAMMABLE LIQUID, TOXIC, N.O.S. (Ethylbenzene, Xylene)
Class	:	3
Subsidiary risk	:	6.1
Packing group	:	III
Labels	:	3 (6.1)
Environmentally hazardous	:	no

IATA-DGR

UN/ID No.	:	UN 1992
Proper shipping name	:	Flammable liquid, toxic, n.o.s. (Ethylbenzene, Xylene)
Class	:	3
Subsidiary risk	:	6.1
Packing group	:	III
Labels	:	Flammable Liquids, Toxic
Packing instruction (cargo aircraft)	:	366
Packing instruction (passenger aircraft)	:	355

IMDG-Code

UN number	:	UN 1992
Proper shipping name	:	FLAMMABLE LIQUID, TOXIC, N.O.S. (Ethylbenzene, Xylene, deltamethrin (ISO))
Class	:	3
Subsidiary risk	:	6.1
Packing group	:	III
Labels	:	3 (6.1)
EmS Code	:	F-E, S-D
Marine pollutant	:	yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

Refer to section 15 for specific national regulation.

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

ERG Code : 131

15. REGULATORY INFORMATION

Related Regulations

Fire Service Law

Group 4, Type 2 petroleums, Water insoluble liquid, (1000 litre), Hazardous rank III

Chemical Substance Control Law

Priority Assessment Chemical Substance

Chemical name	Number
Ethylbenzene	50
Xylene	125
alpha-(Nonylphenyl)-omega-hydroxypoly(oxyethylene)	86
2,6-Di-tert-butyl-4-methylphenol	64

Industrial Safety and Health Law

Harmful Substances Prohibited from Manufacture

Not applicable

Harmful Substances Required Permission for Manufacture

Not applicable

Substances Prevented From Impairment of Health

Chemical name
Ethylbenzene

Circular concerning Information on Chemicals having Mutagenicity - Annex 2: Information on Existing Chemicals having Mutagenicity

Not applicable

Circular concerning Information on Chemicals having Mutagenicity - Annex 1: Information on Notified Substances having Mutagenicity

Not applicable

Substances Subject to be Notified Names

Law Article 57-2 (Ministerial Order Article 34-2 Appended Table 2)

Chemical name	Concentration (%)	Remarks
Ethylbenzene	38.71	-
Xylene	36.8	-
2,6-Di-tert-butyl-4-cresol	>=1 - <10	-
Methanol	0.35	-

Substances Subject to be Indicated Names

Law Article 57 (Ministerial Order Article 30 Appended Table 2)

Chemical name	Remarks
ethylbenzene	-
xylene	-
2,6-Di-tert-butyl-4-cresol	-
methanol	-

Skin and Eye Damage Substances (ISHL MO Art. 594-2)

Chemical name

ethylbenzene
Xylene
Methanol

Carcinogenic Substances (Article 577-2 of the Occupational Health and Safety Regulations)

Not applicable

Ordinance on Prevention of Hazards Due to Specified Chemical Substances - Group 2 Substance

Chemical name
ethylbenzene

Ordinance on Prevention of Lead Poisoning

Not applicable

Ordinance on Prevention of Tetraalkyl Lead Poisoning

Not applicable

Ordinance on Prevention of Organic Solvent Poisoning

Organic Solvents Class 2

Enforcement Order of the Industrial Safety and Health Law - Attached table 1 (Dangerous Substances)

Inflammable Substance

Poisonous and Deleterious Substances Control Law

Not applicable

Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof

Class I Designated Chemical Substances

Chemical name	Administration number	Concentration (%)
Ethylbenzene	53	39
Xylene	80	37
Poly(oxyethylene) alkylphenyl ether (limited to those the alkyl group is C=9)	410	11
2,6-Di-tert-butyl-4-cresol	207	4.8

High Pressure Gas Safety Act

Not applicable

Explosive Control Law

Not applicable

Vessel Safety Law

Flammable liquids (Article 2 and 3 of rules on shipping and storage of dangerous goods and its Attached Table 1)

Aviation Law

Flammable liquid (Article 194 of The Enforcement Rules of Aviation Law and its Attached Table 1)

Marine Pollution and Sea Disaster Prevention etc Law

Bulk transportation	:	Noxious liquid substance(Category Y)
Pack transportation	:	Classified as marine pollutant

Narcotics and Psychotropics Control Act

Narcotic or Psychotropic Raw Material (Export / Import Permission)
Not applicable
Specific Narcotic or Psychotropic Raw Material (Export / Import permission)
Not applicable

Waste Disposal and Public Cleansing Law

Specially Controlled Industrial Waste

The components of this product are reported in the following inventories:

AICS	:	not determined
DSL	:	not determined
IECSC	:	not determined

16. OTHER INFORMATION

In this SDS, if the concentration of substances subject to notification under the Industrial Safety and Health Law is indicated as a range, it includes cases where it is a trade secret.

Further information

Sources of key data used to compile the Safety Data Sheet	:	Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, http://echa.europa.eu/

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

Date format	:	yyyy/mm/dd

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	:	ACGIH - Biological Exposure Indices (BEI)
JP ISHL OEL 577-2(2)	:	Concentration standard (Value set by the Minister of Health, Labour and Welfare stipulated under the Ministerial Ordinance Article 577-2(2))
JP OEL ISHL	:	Japan. Administrative Control Levels
JP OEL JSOH	:	Japan. The Japan Society for Occupational Health. Recommendation of Occupational Exposure Limits
JSOH	:	Occupational exposure limits based on biological monitoring (JSOH).
ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / STEL	:	Short-term exposure limit
JP ISHL OEL 577-2(2) / 8h-	:	8-hour Occupational Exposure Limit-Mean

OEL-M
JP OEL ISHL / ACL : Administrative Control level
JP OEL JSOH / OEL-M : Occupational Exposure Limit-Mean

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

JP / EN