ThreeBond

SAFETY DATA SHEET

This safety data sheet complies with the requirements of:
JIS Z 7252:2019; JIS Z 7253:2019

Issuing Date 06-Jul-2021
Revision date 15-Oct-2024
Revision Number 4

1. Identification

Product Name ThreeBond 1184

Details of the supplier of the safety data sheet

Supplier
ThreeBond Fine Chemical Co., Ltd.
1-1 Oyama-cho, Midori-ku, Sagamihara-shi, Kanagawa 252-0146 Japan
Emergency telephone number
+81-42-703-7126 (Inquiries regarding SDS content)
+81-42-670-5333 (Inquiries regarding the product or SDS claim)

Recommended use of the chemical and restrictions on use

Recommended use Adhesive, Sealant

Restrictions on use Please be sure to confirm in advance the appropriateness and safety of using the product for the relevant application If the product is to be used for applications other than those recommended, please seek professional judgment This product is for industrial use and its use for household and medical implants is prohibited.

2. Hazard(s) identification

GHS Classification

Flammable liquids	Category 3
Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Classification not possible
Acute toxicity - Inhalation (Gases)	Classification not applicable
Acute toxicity - Inhalation (Vapors)	Category 3
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2B
Respiratory sensitization	Classification not possible
Skin sensitization	Classification not possible
Germ cell mutagenicity	Classification not possible
Carcinogenicity	Category 2
Reproductive toxicity	Category 1B
Effects on or via lactation	Classification not possible
Specific target organ toxicity (single exposure)	Category 1, Category 3
Category 1 Central nervous system, kidneys, liver, Respiratory system.	
Category 2 blood system.	
Category 3 Target organ effects: Respiratory irritation, Narcotic effects.	
Specific target organ toxicity (repeated exposure)	Category 1
Category 1 auditory organs, nervous system, Respiratory system.	
Category 2 blood system.	
Aspiration hazard	Category 1

Acute aquatic toxicity	Category 1
Chronic aquatic toxicity	Category 2
Ozone	Classification not possible

GHS label elements

Signal word Danger

Hazard statements

H226 - Flammable liquid and vapor
H302 - Harmful if swallowed
H332 - Harmful if inhaled
H331 - Toxic if inhaled
H315 - Causes skin irritation
H320 - Causes eye irritation
H351 - Suspected of causing cancer
H360 - May damage fertility or the unborn child
H335 - May cause respiratory irritation
H336 - May cause drowsiness or dizziness
H400 - Very toxic to aquatic life
H411 - Toxic to aquatic life with long lasting effects
H304 - May be fatal if swallowed and enters airways
H370 - Causes damage to organs
H372 - Causes damage to organs through prolonged or repeated exposure
Causes damage to the following organs: Central nervous system, kidneys, liver, Respiratory system.
May cause damage to the following organs: blood system.
Causes damage to the following organs through prolonged or repeated exposure: auditory organs, nervous system, Respiratory system.
May cause damage to the following organs through prolonged or repeated exposure: blood system.

Precautionary statements

Prevention

• Do not handle until all safety precautions have been read and understood
• Wear protective gloves/protective clothing/eye protection/face protection
• Wash face, hands and any exposed skin thoroughly after handling
• Do not eat, drink or smoke when using this product
• Use only outdoors or in a well-ventilated area
• Do not breathe dust/fume/gas/mist/vapors/spray
• Avoid release to the environment
• Ground and bond container and receiving equipment
• Use non-sparking tools
• Take action to prevent static discharges
• Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
• Keep container tightly closed
• Keep cool
• Obtain special instructions or technical data sheet before use
• Use explosion-proof electrical/ ventilating/ lighting/ equipment

Response

• IF exposed or concerned: Get medical advice/attention
• IF exposed or concerned: Call a POISON CENTER or doctor
• Specific treatment (see section 4 on this SDS)

Eyes

• Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
• If eye irritation persists: Get medical advice/attention

Ingestion
• IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
• Rinse mouth
• IF SWALLOWED: Immediately call a POISON CENTER or doctor
• Do NOT induce vomiting
Skin
• IF ON SKIN: Wash with plenty of water and soap
• If skin irritation occurs: Get medical advice/attention
• Take off contaminated clothing and wash it before reuse
• IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]
Inhalation
• IF INHALED: Remove person to fresh air and keep comfortable for breathing
• Call a POISON CENTER or doctor
• Call a POISON CENTER or doctor if you feel unwell
Fire
• In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish
Spill
• Collect spillage
Storage
• Store locked up
• Store in a well-ventilated place. Keep container tightly closed
Disposal
• Dispose of contents/container to an approved waste disposal plant

Other hazards

May be harmful in contact with skin.

3. Composition/information on ingredients

Pure substance/mixture Mixture

Chemical name	CAS No.	Weight-%	ENCS Number	ISHL No.
Ethylbenzene	100-41-4	26	(3)-28,(3)-60	(3)-28,(3)-60
2-Butoxyethanol	111-76-2	3.5	(2)-407,(2)-2424,(7)-97	(2)-407,(2)-2424,(7)-97
Xylenes (o-, m-, p- isomers)	1330-20-7	14	(3)-3,(3)-60	(3)-3,(3)-60
2,6-Di-tert-butyl-p-cresol	128-37-0	0.1-<1	(3)-540,(9)-1805	(3)-540,(9)-1805
1,1,2-Trichloroethane	79-00-5	0.1-<1	(2)-55	(2)-55
1-Methyl-2-pyrrolidone	872-50-4	0.1-<1	(5)-113	8-(1)-1014,8-(1)-1013
Chlorosulfone polyethylene, Inorganic filler	-	50-<60		

This product contains ≥0.1 - <1.0% of substance(s) that are classified for Skin sensitization Category 1/1B. This product contains ≥0.1 - <0.3% of substance (s) that are classified for Reproductive toxicity Category 1/1A/1B/Lactation.

Pollutant Release and Transfer Register (PRTR)
The amount of the relevant substance in certain cases referenced in article 4(i)(a) or 4(i)(b) of the Enforcement Order of the Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof (PRTR Act) is calculated based on the conversion factors shown (with safety factor = 1 in cases where conversion factor information is not available)

Chemical name	Cabinet order name	Metal, CN, F, etc.	Conversion coefficient	Category	Ordinance number	Control number
Ethylbenzene	Ethylbenzene			Class I designated chemical substance	1-73	53
*	Ethyleneglycol Monobutyl Ether (Synonym: Butyl Cellosolve)			Class I designated chemical substance	1-77	594
*	Xylene			Class I designated	1-103	80

Chemical name	Cabinet order name	Metal, CN, F, etc.	Conversion coefficient	Category	Ordinance number	Control number
				chemical substance		

***** Refer to Cabinet order name

Industrial Safety and Health Law
ISHL Notifiable Substances
Article 57-2 of the ISHL, Article 18-2, Item 1, Item 2, Table 9 and Item 3, Table 3 of Order for Enforcement
Harmful substances requiring risk assessment
Article 57-3 of the ISHL

Chemical name	Ministerial Ordinance Name	CAS No.	Implementation date
Ethylbenzene	Ethylbenzene	100-41-4	
2-Butoxyethanol	Ethylene glycol monobutyl ether	111-76-2	
Xylenes (o-, m-, p- isomers)	Xylene	1330-20-7	
2,6-Di-tert-butyl-p-cresol	2,6-Di-tert-butyl-p-cresol	128-37-0	
1,1,2-Trichloroethane	Trichloroethane	79-00-5	
1-Methyl-2-pyrrolidone	N-Methyl-2-pyrrolidone	872-50-4	

Harmful Substances Whose Names Are to be Indicated on the Label
Article 57 of ISHL, Article 18, Item 1, Item 2, Table 9 and Item 3, Table 3 of Order for Enforcement

Chemical name	Ministerial Ordinance Name	CAS No.	Implementation date
Ethylbenzene	Ethylbenzene	100-41-4	
2-Butoxyethanol	Ethylene glycol monobutyl ether	111-76-2	
Xylenes (o-, m-, p- isomers)	Xylene	1330-20-7	

Prevention of hazards due to specified chemical substances

Chemical name	CAS No.	Category	Ordinance number
Ethylbenzene	100-41-4	Group 2 specified chemical substance, special organic solvent, etc. (Ordinance on Prevention of Hazards Due to Specified Chemical Substances Art.2 Par.1, Item 2, 3-3)	2-03-3

Poisonous and Deleterious Substances Control Law
Not applicable

Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (CSCL)
The table below indicates ingredients above the cut-off threshold considered as relevant which are listed

Chemical name	CAS No.	Chemical Substances Control Law
Ethylbenzene	100-41-4	Priority assessment chemical substance
2-Butoxyethanol	111-76-2	Priority assessment chemical substance
Xylenes (o-, m-, p- isomers)	1330-20-7	Priority assessment chemical substance

4. First-aid measures

General advice

Show this safety data sheet to the doctor in attendance. IF exposed or concerned: Get medical advice/attention. Immediate medical attention is required.

In case of inhalation

Remove to fresh air. Aspiration into lungs can produce severe lung damage. If breathing has stopped, give artificial respiration. Get medical attention immediately. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. If breathing is difficult, (trained personnel should) give oxygen. Get immediate medical advice/attention. Delayed pulmonary edema may occur. Immediate medical attention is required. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory

	medical device.
In case of skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If symptoms persist, call a physician.
In case of eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. If symptoms persist, call a physician. Get medical attention if irritation develops and persists. Remove contact lenses, if present and easy to do. Continue rinsing.
In case of ingestion	Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. ASPIRATION HAZARD IF SWALLOWED - CAN ENTER LUNGS AND CAUSE DAMAGE. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Get immediate medical advice/attention.
Most important symptoms/effects, acute and delayed	Difficulty in breathing. Coughing and/ or wheezing. Dizziness. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.
Self-protection of the first aider	Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Do not breathe vapor or mist.
Note to physicians	Because of the danger of aspiration, emesis or gastric lavage should not be employed unless the risk is justified by the presence of additional toxic substances.

5. Fire-fighting measures

Suitable Extinguishing Media	Dry chemical. Carbon dioxide (CO2). Water spray. Alcohol resistant foam.
Unsuitable extinguishing media	Do not scatter spilled material with high pressure water streams.
Specific hazards arising from the chemical	Risk of ignition. Keep product and empty container away from heat and sources of ignition. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire, cool container with water spray.
Special Extinguishing Media	Cool container with water spray.
Special protective equipment and precautions for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.
Other information	CAUTION: Use of water spray when fighting fire may be inefficient.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Do not breathe vapor or mist. Avoid breathing vapors or mists.
For emergency responders	Use personal protection recommended in Section 8.
Environmental precautions	Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if

safe to do so. Prevent product from entering drains.

Methods for containment Stop leak if you can do it without risk. Do not touch or walk through spilled material. A vapor suppressing foam may be used to reduce vapors. Dike far ahead of spill to collect runoff water. Keep out of drains, sewers, ditches and waterways. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

Methods for cleaning up Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Other information Ventilate the area. Refer to protective measures listed in Sections 7 and 8.

7. Handling and storage

Handling

Advice on safe handling Use personal protection equipment. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Use spark-proof tools and explosion-proof equipment. Keep in an area equipped with sprinklers. Use according to package label instructions. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes. Take off contaminated clothing and wash before reuse. Do not breathe vapor or mist. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Take equipment measures listed in Section 8. Wear protection gear.

Hygiene Measures Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes or clothing. Do not breathe vapor or mist. Remove and wash contaminated clothing and gloves, including the inside, before re-use.

Storage

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labeled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers. Store in accordance with the particular national regulations. Store in accordance with local regulations. Keep out of the reach of children. Store locked up. Store away from other materials.

8. Exposure controls/personal protection

Exposure guidelines

Chemical name	Japan Society of Occupational Health	ISHL Working Environmental Evaluation Standards - Administrative Control Levels	ACGIH TLV	Japan ISHA Workplace exposure limit - 8 hours	Japan ISHA Workplace exposure limit - Short time
Ethylbenzene 100-41-4	TWA: 87 mg/m³ TWA: 20 ppm	20 ppm	Ototoxicant - potential to cause	-	-

	S*		hearing disorders TWA: 20 ppm		
2-Butoxyethanol 111-76-2	Ceiling: 20 ppm Ceiling: 97 mg/m³ S*	25 ppm	TWA: 20 ppm	-	-
Xylenes (o-, m-, p-isomers) 1330-20-7	TWA: 50 ppm TWA: 217 mg/m³	50 ppm	TWA: 20 ppm	-	-
2,6-Di-tert-butyl-p-cresol 128-37-0	-	-	TWA: 2 mg/m³ inhalable fraction and vapor	10 mg/m³	-
1,1,2-Trichloroethane 79-00-5	TWA: 10 ppm TWA: 55 mg/m³ S*	-	TWA: 10 ppm S*	-	-
1-Methyl-2-pyrrolidone 872-50-4	TWA: 1 ppm TWA: 4 mg/m³ S*	-	-	-	-

Biological monitoring indicator

Chemical name	Japan Society of Occupational Health	ACGIH
Ethylbenzene 100-41-4	150 mg/g creatine - urine (Mandelic acid) - end of shift 15 µg/L - urine (Ethylbenzene) - end of shift 200 mg/g creatine - urine (Mandelic acid and Phenylglyoxylic acid) - end of shift at end of work week	0.15 g/g creatinine - urine (Sum of mandelic acid and phenylglyoxylic acid) - end of shift
2-Butoxyethanol 111-76-2	200 mg/g creatine - urine (total Butoxyacetic acid) - end of shift	200 mg/g creatinine - urine (Butoxyacetic acid with hydrolysis) - end of shift
Xylenes (o-, m-, p- isomers) 1330-20-7	800 mg/L - urine (total (o-, m-, p-) Methylhippuric acid) - end of shift at end of work week	1.5 g/g creatinine - urine (Methylhippuric acids) - end of shift
1-Methyl-2-pyrrolidone 872-50-4	-	100 mg/L - urine (5-Hydroxy-N-methyl-2-pyrrolidone) - end of shift

Engineering controls

Showers
Eyewash stations
Ventilation systems.

Environmental exposure controls

Install local ventilation or seal source of substances. Install safety shower, hand wash, and eye wash station. Clearly indicate the location.

Personal protective equipment

Respiratory protection

In case of inadequate ventilation wear respiratory protection. If workers are exposed to gases or vapors, consider wearing respiratory protective equipment (e.g., gas masks). When handling highly concentrated chemicals, consider wearing an air-supplied respirator. When selecting a respirator, the following points should be considered.
-Do not use masks in areas where the oxygen concentration is less than 18%.
-When using a gas mask in an environment where workers are exposed to dust, use an absorbent can with dustproof function.
-Select a gas mask with performance and construction suitable for the work in accordance with the Japanese Industrial Standard (JIS T8152), and refer to the data provided in the instruction manual.

Hand protection

Wear suitable gloves. Impervious gloves. Consider wearing impervious protective gloves. When selecting protective gloves, the following points should be considered.

-Referring to the impermeability class, etc. listed in the instruction manual, set a use time that allows for the work, and use protective gloves within that time range.

Eye/face protection Tight sealing safety goggles.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron. Antistatic boots.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Liquid
Color	Gray
Odor	Solvent odor

Property	**Values**	**Remarks • Method**
Melting point / freezing point	no data available	
Initial boiling point and boiling range		
Flammability	no data available	
Upper/lower flammability or explosive limits		
Upper flammability or explosive limits	no data available	
Lower flammability or explosive limits	no data available	
Flash point	23.6 °C	Tag closed cup
Evaporation rate	no data available	
Autoignition temperature	no data available	
Decomposition temperature	no data available	
pH	no data available	
Viscosity		
Kinematic viscosity	no data available	
Dynamic viscosity	9.5 Pa･s	
Water solubility	Slightly soluble	
Solubility(ies)	no data available	
Partition Coefficient (n-octanol/water)	no data available	
Vapor pressure	no data available	
Density and/or relative density		
Relative density	1.26	
Liquid Density	no data available	
Bulk density	no data available	
Relative vapor density	no data available	
Particle characteristics		
Particle Size	no data available	
Particle Size Distribution	no data available	

Other information

Explosive properties	no data available
Oxidizing properties	No data available

10. Stability and reactivity

Chemical stability Stable under normal conditions.

Possibility of hazardous reactions React with strong oxidizing agent. Could cause fire.

Conditions to avoid High temperature.

Incompatible materials Strong oxidizing agents.

Hazardous decomposition products May generate harmful gas by incineration.

11. Toxicological information

Acute toxicity

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	1,430.80 mg/kg
ATEmix (dermal)	2,198.90 mg/kg
ATEmix (inhalation-gas)	99,999.00 mg/l
ATEmix (inhalation-vapor)	6.30 mg/l
ATEmix (inhalation-dust/mist)	2.23 mg/l

Unknown acute toxicity

25.4232 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
34.0842 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
34.0842 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Numerical measures of toxicity - Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Ethylbenzene	= 3500 mg/kg (Rat)	= 15400 mg/kg (Rabbit)	= 17.4 mg/L (Rat) 4 h
2-Butoxyethanol	= 470 mg/kg (Rat)	= 435 mg/kg (Rabbit)	= 450 ppm (Rat) 4 h = 486 ppm (Rat) 4 h
Xylenes (o-, m-, p- isomers)	= 3500 mg/kg (Rat)	> 4350 mg/kg (Rabbit)	= 29.08 mg/L (Rat) 4 h
2,6-Di-tert-butyl-p-cresol	> 2930 mg/kg (Rat)	> 2000 mg/kg (Rat)	-
1,1,2-Trichloroethane	= 836 mg/kg (Rat)	= 5371 mg/kg (Rabbit)	= 2.78 mg/L (Rat) 8 h
1-Methyl-2-pyrrolidone	= 3914 mg/kg (Rat)	= 8 g/kg (Rabbit)	> 5.1 mg/L (Rat) 4 h

Abbreviations and acronyms
Rat: Rat

Symptoms Difficulty in breathing. Coughing and/ or wheezing. Dizziness. Redness. May cause redness and tearing of the eyes. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

Product Information

Ingestion Specific test data for the substance or mixture is not available. Potential for aspiration if swallowed. May cause lung damage if swallowed. Aspiration may cause pulmonary edema and pneumonitis. May be fatal if swallowed and enters airways. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. (based on components).

Inhalation Specific test data for the substance or mixture is not available. Aspiration into lungs can produce severe lung damage. May cause pulmonary edema. Pulmonary edema can be fatal. May cause irritation of respiratory tract. Toxic by inhalation. (based on components). May cause drowsiness or dizziness. Harmful by inhalation.

Skin contact Repeated exposure may cause skin dryness or cracking. Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components).

Eye contact Specific test data for the substance or mixture is not available. May cause irritation. Causes eye irritation. May cause redness, itching, and pain.

Skin corrosion/irritation Classification based on data available for ingredients. Causes skin irritation.

Serious eye damage/eye irritation Classification based on data available for ingredients. Causes eye irritation.

Carcinogenicity Contains a known or suspected carcinogen. Classification based on data available for ingredients. Suspected of causing cancer.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	Japan	IARC
Ethylbenzene 100-41-4	2	Group 2B
2-Butoxyethanol 111-76-2	-	Group 3
Xylenes (o-, m-, p- isomers) 1330-20-7	-	Group 3
2,6-Di-tert-butyl-p-cresol 128-37-0	-	Group 3
1,1,2-Trichloroethane 79-00-5	2	Group 3

Legend

IARC (International Agency for Research on Cancer)
Group 2B - Possibly Carcinogenic to Humans
Group 3 - Not Classifiable as to Carcinogenicity in Humans

Reproductive toxicity Classification based on data available for ingredients. May damage fertility or the unborn child.

STOT - single exposure Based on the classification criteria of the Globally Harmonized System as adopted in the country or region with which this safety data sheet complies, this product has been determined to cause systemic target organ toxicity from acute exposure. (STOT SE). Causes damage to organs if swallowed. May cause respiratory irritation. May cause drowsiness or dizziness.

Causes damage to the following organs: Central nervous system, kidneys, liver, Respiratory system.
May cause damage to the following organs: blood system.

STOT - repeated exposure Causes damage to organs through prolonged or repeated exposure.

Causes damage to the following organs through prolonged or repeated exposure: auditory organs, nervous system, Respiratory system.
May cause damage to the following organs through prolonged or repeated exposure: blood system.

Aspiration hazard May be fatal if swallowed and enters airways.

12. Ecological information

Ecotoxicity Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Chemical name	Algae/aquatic plants	Fish	Crustacea
Ethylbenzene	EC50: =4.6mg/L (72h, Pseudokirchneriella subcapitata) EC50: >438mg/L (96h, Pseudokirchneriella subcapitata) EC50: 2.6 - 11.3mg/L (72h, Pseudokirchneriella subcapitata) EC50: 1.7 - 7.6mg/L (96h, Pseudokirchneriella subcapitata)	LC50: 11.0 - 18.0mg/L (96h, Oncorhynchus mykiss) LC50: =4.2mg/L (96h, Oncorhynchus mykiss) LC50: 7.55 - 11mg/L (96h, Pimephales promelas) LC50: =32mg/L (96h, Lepomis macrochirus) LC50: 9.1 - 15.6mg/L (96h, Pimephales promelas) LC50: =9.6mg/L (96h, Poecilia reticulata)	EC50: 1.8 - 2.4mg/L (48h, Daphnia magna)
2-Butoxyethanol	-	LC50: =1490mg/L (96h, Lepomis macrochirus) LC50: =2950mg/L (96h, Lepomis macrochirus)	EC50: >1000mg/L (48h, Daphnia magna)
Xylenes (o-, m-, p- isomers)	-	LC50: =13.4mg/L (96h, Pimephales promelas) LC50: 2.661 - 4.093mg/L (96h, Oncorhynchus mykiss) LC50: 13.5 - 17.3mg/L (96h, Oncorhynchus mykiss) LC50: 13.1 - 16.5mg/L (96h, Lepomis macrochirus) LC50: =19mg/L (96h, Lepomis macrochirus) LC50: 7.711 - 9.591mg/L (96h, Lepomis macrochirus) LC50: 23.53 - 29.97mg/L (96h, Pimephales promelas) LC50: =780mg/L (96h, Cyprinus carpio) LC50: >780mg/L (96h, Cyprinus carpio) LC50: 30.26 - 40.75mg/L (96h, Poecilia reticulata)	EC50: =3.82mg/L (48h, water flea) LC50: =0.6mg/L (48h, Gammarus lacustris)
2,6-Di-tert-butyl-p-cresol	EC50: =6mg/L (72h, Pseudokirchneriella subcapitata) EC50: >0.42mg/L (72h, Desmodesmus subspicatus)	-	-
1,1,2-Trichloroethane	EC50: =167mg/L (96h, Desmodesmus subspicatus)	LC50: =81.6mg/L (96h, Pimephales promelas) LC50: 35 - 47mg/L (96h, Lepomis macrochirus)	EC50: =18mg/L (48h, Daphnia magna) EC50: 57 - 110mg/L (48h, Daphnia magna)
1-Methyl-2-pyrrolidone	EC50: >500mg/L (72h, Desmodesmus subspicatus)	LC50: =832mg/L (96h, Lepomis macrochirus) LC50: =1072mg/L (96h, Pimephales promelas) LC50: =1400mg/L (96h, Poecilia reticulata)	EC50: =4897mg/L (48h, Daphnia magna)

Percentage for unknown hazards 0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Persistence and degradability No information available.

Bioaccumulation There is no data for this product.

Component Information

Chemical name	Partition coefficient
Ethylbenzene 100-41-4	3.6
2-Butoxyethanol 111-76-2	0.81
Xylenes (o-, m-, p- isomers) 1330-20-7	3.15
2,6-Di-tert-butyl-p-cresol 128-37-0	5.1
1,1,2-Trichloroethane 79-00-5	1.89
1-Methyl-2-pyrrolidone 872-50-4	-0.46

Mobility in soil No information available.

Hazardous to the ozone layer Classification not possible. Based on available data, the classification criteria are not met.

Other adverse effects No information available.

13. Disposal considerations

Waste from residues/unused products Dispose of in accordance with national, state and local regulations. Consult industrial waste managent companies for waste. Do not release this product to natural environment nor reclaim.

Contaminated packaging Dispose containers as same as residual of this product.

14. Transport information

IMDG

UN number or ID number UN1992
UN proper shipping name Flammable liquid, toxic, n.o.s.
Description UN1992, Flammable liquid, toxic, n.o.s., 3 (6.1), III, (23.6°C c.c.)
Transport hazard class(es) 3
Subsidiary hazard class 6.1
Packing group III
Marine pollutant P
EmS-No. F-E, S-D
Special Provisions 223, 274

ADR

UN number or ID number UN1992
UN proper shipping name Flammable liquid, toxic, n.o.s.
Description UN1992, Flammable liquid, toxic, n.o.s., 3 (6.1), III, (D/E)
Transport hazard class(es) 3
Subsidiary hazard class 6.1
Packing group III

ERG Code	3P
Special Provisions	274

IATA

UN number or ID number	UN1992
UN proper shipping name	Flammable liquid, toxic, n.o.s.
Description	UN1992, Flammable liquid, toxic, n.o.s., 3 (6.1), III
Transport hazard class(es)	3
Subsidiary hazard class	6.1
Packing group	III
Special Provisions	A3
ERG Code	3P

Japan

UN number or ID number	UN1992
UN proper shipping name	Flammable liquid, toxic, n.o.s.
Description	UN1992, Flammable liquid, toxic, n.o.s., 3 (6.1), III
Transport hazard class(es)	3
Subsidiary hazard class	6.1
Packing group	III
Special Provisions	223, 274

15. Regulatory information

National regulations

Pollutant Release and Transfer Register (PRTR)
Applies See section 3 for more information
Industrial Safety and Health Law

Prevention of hazards due to specified chemical substances
Specified chemical substances (Group 2) - Industrial Safety and Health Law enforcement order Table 3 (related to article 6, article 9-3, article 21, article 22 and the Ordinance on Prevention of Hazards Due to Specified Chemical Substances)
Harmful Substances Requiring Workers to Subject to Medical Exams
Medical Examination - Industrial Safety and Health Law article 66, enforcement order article 22, and the Ordinance on Prevention of Hazards Due to Specified Chemical Substances, Table 5
Ordinance on Prevention of Organic Solvent Poisoning
Organic solvents class 2 - Industrial Safety and Health Law enforcement order Table 6-2 (related to article 6, article 21, article 22, and the Ordinance on Prevention of Organic Solvent Poisoning)
Substances under special supervision
Specified chemical substance subject to article 38-3 and 38-4 of the Ordinance on Prevention of Hazards Due to Specified Chemical Substances
ISHL Notifiable Substances
Article 57-2 of the ISHL, Article 18-2, Item 1, Item 2, Table 9 and Item 3, Table 3 of Order for Enforcement
Harmful substances requiring risk assessment
Article 57-3 of the ISHL
Harmful Substances Whose Names Are to be Indicated on the Label
Article 57 of ISHL, Article 18, Item 1, Item 2, Table 9 and Item 3, Table 3 of Order for Enforcement
Guidelines for Carcinogenic substances
Chemical substances specified by the Minister of Health, Labor and Welfare based on the provisions of Article 28, Paragraph 3 of the Industrial Safety and Health Act

Poisonous and Deleterious Substances Control Law
Not applicable
Explosives Control Law
No
High Pressure Gas Safety Act
Not applicable
Fire Service Law:
Flammable liquids, group 4, 2nd class petroleums, water-insoluble, hazard rank III, 1000 liters
Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (CSCL)
The table below indicates ingredients above the cut-off threshold considered as relevant which are listed

Chemical name	CAS No.	Chemical Substances Control Law
Ethylbenzene	100-41-4	Priority assessment chemical substance
2-Butoxyethanol	111-76-2	Priority assessment chemical substance
Xylenes (o-, m-, p- isomers)	1330-20-7	Priority assessment chemical substance

Ship (Marine Transportation) Safety Act
See section 14 for more information
Civil Aeronautics Act
See section 14 for more information
Act on Port Regulation Law
See section 14 for more information

16. Other information

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Key or legend to abbreviations and acronyms used in the safety data sheet
Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	Ceiling	Maximum limit value
*	Skin designation	+	Sensitizers

Key literature references and sources for data used to compile the SDS
JIS Z 7252:2019 Classification of chemicals based on "Globally Harmonized System of Classification and Labelling of Chemicals (GHS)"
JIS Z 7253:2019 Hazard communication of chemicals based on GHS-Labelling and Safety Data Sheet (SDS)

Disclaimer
This SDS complies with the requirements of JIS Z 7252:2019 and JIS Z 7253:2019 (Japan). 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 given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.