ThreeBond

SAFETY DATA SHEET

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

Issuing Date 08-Oct-2021
Revision date 15-Dec-2023
Revision Number 3

1. Identification

Product Name ThreeBond 1110G

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

Acute toxicity - Oral	Classification not possible
Acute toxicity - Dermal	Classification not possible
Acute toxicity - Inhalation (Gases)	Classification not applicable
Acute toxicity - Inhalation (Vapors)	Classification not possible
Acute toxicity - Inhalation (Dusts/Mists)	Classification not possible
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Respiratory sensitization	Classification not possible
Skin sensitization	Category 1
Germ cell mutagenicity	Classification not possible
Carcinogenicity	Classification not possible
Reproductive toxicity	Classification not possible
Effects on or via lactation	Classification not possible
Specific target organ toxicity (single exposure)	Classification not possible
Specific target organ toxicity (repeated exposure)	Category 2
Category 2 Respiratory system, blood system.	
Aspiration hazard	Classification not possible
Acute aquatic toxicity	Classification not possible
Chronic aquatic toxicity	Classification not possible
Ozone	Classification not possible

GHS label elements

Signal word Warning

Hazard statements

H315 - Causes skin irritation
H319 - Causes serious eye irritation
H317 - May cause an allergic skin reaction
H373 - May cause damage to organs through prolonged or repeated exposure
May cause damage to the following organs through prolonged or repeated exposure: Respiratory system, blood system.

Precautionary statements

Prevention

• Wash face, hands and any exposed skin thoroughly after handling
• Contaminated work clothing should not be allowed out of the workplace
• Do not breathe dust/fume/gas/mist/vapors/spray
• Wear protective gloves/protective clothing/eye protection/face protection

Response

• Get medical advice/attention if you feel unwell
• 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

Skin

• IF ON SKIN: Wash with plenty of water and soap
• Take off contaminated clothing and wash it before reuse
• If skin irritation or rash occurs: Get medical advice/attention

Storage

• Not applicable

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.
Toluene	108-88-3	0.1-<1	(3)-2,(3)-60	2-(8)-869
2,6-Di-tert-butyl-p-cresol	128-37-0	0.1-<1	(3)-540,(9)-1805	(3)-540,(9)-1805
Titanium dioxide (IV)	13463-67-7	1-<5	(1)-558,(5)-5225	(1)-558,(5)-5225
Cumene hydroperoxide	80-15-9	1.2	(3)-1014	(3)-1014
Cumene	98-82-8	0.1-<1	(3)-22	(3)-32,(3)-22
Noncrystalline silica	-	1-<5		
Methacryl acid ester, Synthetic resin	-	85-<95		

This product contains ≥0.1 - <0.3% of substance (s) that are classified for Reproductive toxicity Category 1/1A/1B/Lactation. This product contains ≥0.1 - <3.0% of substance (s) that are classified for Reproductive toxicity Category 2. This product contains ≥1.0 - <10% of substance (s) that are classified for Specific target organ toxicity (single exposure) Category 2.

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
*	1-Methyl-1-Phenylethyl Hydroperoxide			Class II designated chemical substance	2-129	440

***** 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
Toluene	Toluene	108-88-3	
2,6-Di-tert-butyl-p-cresol	2,6-Di-tert-butyl-p-cresol	128-37-0	
Titanium dioxide (IV)	Titanium(IV) oxide	13463-67-7	
Cumene	Cumene	98-82-8	

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
Titanium dioxide (IV)	Titanium(IV) oxide	13463-67-7	

Poisonous and Deleterious Substances Control Law
Not applicable

Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (CSCL)
Not applicable

4. First-aid measures

General advice Show this safety data sheet to the doctor in attendance.

In case of inhalation Remove to fresh air. Get medical attention immediately if symptoms occur.

In case of skin contact May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a physician. Wash off immediately with soap and plenty of water for at least 15 minutes.

In case of eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get medical attention if irritation develops and persists.

In case of ingestion Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician.

Most important symptoms/effects, acute and delayed Itching. Rashes. Hives. May cause redness and tearing of the eyes. Burning sensation.

Self-protection of the first aider Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

Note to physicians May cause sensitization in susceptible persons. Treat symptomatically.

5. Fire-fighting measures

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical Product is or contains a sensitizer. May cause sensitization by skin contact.

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 Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions Prevent further leakage or spillage if safe to do so.

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Pick up and transfer to properly labeled containers.

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

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

7. Handling and storage

Handling

Advice on safe handling Take equipment measures listed in Section 8. Wear protection gear. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

Hygiene Measures Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Avoid contact with skin, eyes or clothing.

Storage

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place.

8. Exposure controls/personal protection

Exposure guidelines

Chemical name	Japan Society of	ISHL Working	ACGIH TLV	Japan ISHA	Japan ISHA

	Occupational Health	Environmental Evaluation Standards - Administrative Control Levels		Workplace exposure limit - 8 hours	Workplace exposure limit - Short time
Toluene 108-88-3	TWA: 50 ppm TWA: 188 mg/m³ S*	20 ppm	Ototoxicant - potential to cause hearing disorders TWA: 20 ppm	-	-
2,6-Di-tert-butyl-p-cresol 128-37-0	-	-	TWA: 2 mg/m³ inhalable fraction and vapor	10 mg/m³	-
Titanium dioxide (IV) 13463-67-7	TWA: 0.3 mg/m³	-	TWA: 0.2 mg/m³ nanoscale respirable particulate matter TWA: 2.5 mg/m³ finescale respirable particulate matter	-	-
Cumene 98-82-8	TWA: 10 ppm TWA: 50 mg/m³ S*	-	TWA: 5 ppm	10 ppm	-

Biological monitoring indicator

Chemical name	Japan Society of Occupational Health	ACGIH
Toluene 108-88-3	0.6 mg/L - blood (Toluene) - within 2 h prior to end of shift at end of work week 0.06 mg/L - urine (Toluene) - within 2 h prior to end of shift at end of work week	0.02 mg/L - blood (Toluene) - prior to last shift of workweek 0.03 mg/L - urine (Toluene) - end of shift 0.3 mg/g creatinine - urine (o-Cresol with hydrolysis) - 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

Wear safety glasses with side shields (or goggles).

Skin and body protection

Wear suitable protective clothing. Long sleeved clothing.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Liquid
Color	Milky white
Odor	Distinct 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	Not flammable	
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	23 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	1.12	
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 Polymerize by heat. Polymerize by contacting metals and excluding oxygen.

Conditions to avoid Direct sunlight. heating.

Incompatible materials Metals.

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)	5,693.00 mg/kg
ATEmix (dermal)	2,400.00 mg/kg
ATEmix (inhalation-dust/mist)	8.90 mg/l

Numerical measures of toxicity - Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Toluene	= 2600 mg/kg (Rat)	= 12000 mg/kg (Rabbit)	= 12.5 mg/L (Rat) 4 h
2,6-Di-tert-butyl-p-cresol	> 2930 mg/kg (Rat)	> 2000 mg/kg (Rat)	-
Titanium dioxide (IV)	> 10000 mg/kg (Rat)	-	= 5.09 mg/L (Rat) 4 h
Cumene hydroperoxide	= 382 mg/kg (Rat)	= 0.126 mL/kg (Rabbit)	= 220 ppm (Rat) 4 h
Cumene	= 1400 mg/kg (Rat)	= 12300 µL/kg (Rabbit)	> 3577 ppm (Rat) 6 h

Abbreviations and acronyms
Rat: Rat
Rabbit: Rabbit

Symptoms Itching. Rashes. Hives. Redness. May cause redness and tearing of the eyes.

Product Information

Ingestion Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Inhalation Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract.

Skin contact May cause sensitization by skin contact. Specific test data for the substance or mixture is not available. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. (based on components). Causes skin irritation.

Eye contact Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). 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 serious eye irritation.

Respiratory or skin sensitization May cause an allergic skin reaction.

Carcinogenicity The hazardous substance(s) which is (are) any of the following substances and listed on section 3 is (are) embedded in the product and not available as respirable dusts.When used as intended or as supplied, the product will not pose hazards of the hazardous substance(s). Silica, Quartz, Carbon black, Titanium oxide, Crystalline silica.

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

Chemical name	Japan	IARC
Toluene 108-88-3	-	Group 3
2,6-Di-tert-butyl-p-cresol 128-37-0	-	Group 3
Titanium dioxide (IV) 13463-67-7	2	Group 2B
Cumene 98-82-8	1B	Group 2B

Legend

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

Target organ effects Eyes. lungs. Respiratory system.

STOT - single exposure The following hazardous substance is embedded in the product and not available as respirable dusts. When used as intended or as supplied, the product will not pose hazards of the hazardous substance. Silica.

STOT - repeated exposure The hazardous substance(s) which is (are) any of the following substances and listed on section 3 is (are) embedded in the product and not available as respirable dusts. When used as intended or as supplied, the product will not pose hazards of the hazardous substance(s). Silica, Quartz, Carbon black, Crystalline silica. May cause damage to organs through prolonged or repeated exposure.

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

12. Ecological information

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish	Crustacea
Toluene	EC50: >433mg/L (96h, Pseudokirchneriella subcapitata) EC50: =12.5mg/L (72h, Pseudokirchneriella subcapitata)	LC50: 15.22 - 19.05mg/L (96h, Pimephales promelas) LC50: =12.6mg/L (96h, Pimephales promelas) LC50: 5.89 - 7.81mg/L (96h, Oncorhynchus mykiss) LC50: 14.1 - 17.16mg/L (96h, Oncorhynchus mykiss) LC50: =5.8mg/L (96h, Oncorhynchus mykiss) LC50: 11.0 - 15.0mg/L (96h, Lepomis macrochirus) LC50: =54mg/L (96h, Oryzias latipes)	EC50: 5.46 - 9.83mg/L (48h, Daphnia magna) EC50: =11.5mg/L (48h, Daphnia magna)

		LC50: =28.2mg/L (96h, Poecilia reticulata) LC50: 50.87 - 70.34mg/L (96h, Poecilia reticulata)	
2,6-Di-tert-butyl-p-cresol	EC50: =6mg/L (72h, Pseudokirchneriella subcapitata) EC50: >0.42mg/L (72h, Desmodesmus subspicatus)	-	-
Cumene hydroperoxide	-	LC50: =3.9mg/L (96h, Oncorhynchus mykiss)	-
Cumene	EC50: =2.6mg/L (72h, Pseudokirchneriella subcapitata)	LC50: 6.04 - 6.61mg/L (96h, Pimephales promelas) LC50: =4.8mg/L (96h, Oncorhynchus mykiss) LC50: =2.7mg/L (96h, Oncorhynchus mykiss) LC50: =5.1mg/L (96h, Poecilia reticulata)	EC50: =0.6mg/L (48h, Daphnia magna) EC50: 7.9 - 14.1mg/L (48h, Daphnia magna)

Percentage for unknown hazards 0.00801 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Persistence and degradability No information available.

Bioaccumulation

Component Information

Chemical name	Partition coefficient
Toluene 108-88-3	2.73
2,6-Di-tert-butyl-p-cresol 128-37-0	5.1
Cumene hydroperoxide 80-15-9	1.6
Cumene 98-82-8	3.55

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 Not regulated

ADR Not regulated

IATA Not regulated

Japan Not regulated

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
Not applicable
Ordinance on Prevention of Organic Solvent Poisoning
Not applicable
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
Strong mutagenic chemical substances
Existing chemical substances with mutagenicity recognized (Article 57-5 of the Industrial Safety and Health Law, Notification of Labor Standards Bureau Director).

Poisonous and Deleterious Substances Control Law
Not applicable
Explosives Control Law
No
High Pressure Gas Safety Act
Not applicable
Fire Service Law:
Non-hazardous material
Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (CSCL)
Not applicable

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.