ThreeBond

SAFETY DATA SHEET

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

Issuing Date 13-Jul-2021
Revision date 31-Oct-2023
Revision Number 3

1. Identification

Product Name ThreeBond 1796F

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 Curing promoter, Primer

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

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

Chronic aquatic toxicity	Category 3
Ozone	Classification not possible

GHS label elements

Signal word Danger

Hazard statements

H222 - Extremely flammable aerosol
H229 - Pressurized container: May burst if heated
H331 - Toxic if inhaled
H319 - Causes serious eye irritation
H340 - May cause genetic defects
H351 - Suspected of causing cancer
H361 - Suspected of damaging fertility or the unborn child
H335 - May cause respiratory irritation
H336 - May cause drowsiness or dizziness
H412 - Harmful to aquatic life with long lasting effects
H371 - May cause damage to organs
H372 - Causes damage to organs through prolonged or repeated exposure
May cause damage to the following organs: Central nervous system, blood system, circulatory system.
Causes damage to the following organs through prolonged or repeated exposure: Central nervous system, Respiratory system, Digestive 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
• Use only outdoors or in a well-ventilated area
• Wash face, hands and any exposed skin thoroughly after handling
• Do not breathe dust/fume/gas/mist/vapors/spray
• Do not eat, drink or smoke when using this product
• Avoid release to the environment
• Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
• Do not pierce or burn, even after use
• Do not spray on an open flame or other ignition source
• Obtain special instructions or technical data sheet before use

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

Inhalation

• IF INHALED: Remove person to fresh air and keep comfortable for breathing
• Call a POISON CENTER or doctor/physician

Storage

• Store locked up
• Store in a well-ventilated place. Keep container tightly closed
• Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F

Disposal

• Dispose of contents/container to an approved waste disposal plant

Other hazards

No information available.

3. Composition/information on ingredients

Pure substance/mixture Mixture

Chemical name	CAS No.	Weight-%	ENCS Number	ISHL No.
N,N-Dimethylaniline	121-69-7	5.9	(3)-114,(3)-129	(3)-521,(3)-129,(3)-114
Acetone	67-64-1	54	(2)-542	(2)-542
Butane	-	25-35		
Propane	-	5-<15		

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

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
N,N-Dimethylaniline	N,N-Dimethylaniline			Class II designated chemical substance	2-58	216

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
N,N-Dimethylaniline	N,N-Dimethylaniline	121-69-7	
Acetone	Acetone	67-64-1	
Butane	Butane	-	

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
N,N-Dimethylaniline	N,N-Dimethylaniline	121-69-7	
Acetone	Acetone	67-64-1	
Butane	Butane	-	

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. IF exposed or concerned: Get medical advice/attention. Immediate medical attention is required.

In case of inhalation	Remove to fresh air. IF exposed or concerned: Get medical advice/attention. If breathing has stopped, give artificial respiration. Get medical attention immediately. 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. If breathing is difficult, (trained personnel should) give oxygen.
In case of skin contact	Wash off immediately with plenty of water for at least 15 minutes. 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. 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. If symptoms persist, call a physician.
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. Call a physician or poison control center immediately.
Most important symptoms/effects, acute and delayed	May cause redness and tearing of the eyes. Burning sensation. Coughing and/ or wheezing. Difficulty in breathing. 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. 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. Use personal protective equipment as required. See section 8 for more information.
Note to physicians	Treat symptomatically.

5. Fire-fighting measures

Suitable Extinguishing Media	Dry chemical. Carbon dioxide (CO2). Water spray.
Unsuitable extinguishing media	DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED.
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. Cylinders may rupture under extreme heat. Damaged cylinders should be handled only by specialists. Containers may explode when heated. In the event of fire, cool container with water spray.
Flammable properties	HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames. Flammable liquid.
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). Take precautionary measures

against static discharges. Do not breathe vapor or mist.

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. 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. Flood with water to complete polymerization and scrape off floor.

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 Take equipment measures listed in Section 8. Wear protection gear. Use personal protection equipment. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not spray on an open flame or other ignition source. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use spark-proof tools and explosion-proof equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Keep in an area equipped with sprinklers. Do not puncture or incinerate cans. Contents under pressure. In case of rupture. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes. Do not breathe vapor or mist. In case of insufficient ventilation, wear suitable respiratory equipment. Take off contaminated clothing and wash before reuse.

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. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not breathe vapor or mist. Remove and wash contaminated clothing and gloves, including the inside, before re-use.

Storage

Storage Conditions Protect from sunlight. 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. Store in a cool, dry area away from potential sources of heat, open flames, sunlight or other chemicals. Store locked up. Keep out of the reach of children.

8. Exposure controls/personal protection

Exposure guidelines

Chemical name	Japan Society of Occupational Health	ISHL Working Environmental Evaluation Standards -	ACGIH TLV	Japan ISHA Workplace exposure limit - 8 hours	Japan ISHA Workplace exposure limit - Short time

		Administrative Control Levels			
N,N-Dimethylaniline 121-69-7	TWA: 5 ppm TWA: 25 mg/m³ S*	-	STEL: 10 ppm TWA: 5 ppm S*	-	-
Acetone 67-64-1	TWA: 200 ppm TWA: 475 mg/m³	500 ppm	STEL: 500 ppm TWA: 250 ppm	-	-

Biological monitoring indicator

Chemical name	Japan Society of Occupational Health	ACGIH
N,N-Dimethylaniline 121-69-7	-	5 % of hemoglobin - blood (Methemoglobin) - during or end of shift
Acetone 67-64-1	40 mg/L - urine (Acetone) - within 2 h prior to end of shift	25 mg/L - urine (Acetone) - 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
Impervious gloves. Wear suitable 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. Safety glasses with side shields are recommended for medical or industrial exposures.

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 Transparent Light yellow
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	-14 °C
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	no data available
Water solubility	Partially miscible
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	0.81
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 No hazardous reaction could occur under normal condition.

Conditions to avoid Heat, flames and sparks.

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)	16,149.80 mg/kg
ATEmix (dermal)	30,058.00 mg/kg
ATEmix (inhalation-vapor)	7.02 mg/l
ATEmix (inhalation-dust/mist)	6.72 mg/l

Unknown acute toxicity

17.47558 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

Numerical measures of toxicity - Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
N,N-Dimethylaniline	= 951 mg/kg (Rat)	= 1770 mg/kg (Rabbit)	> 0.5 - 5.0 mg/L (Rat) 4 h
Acetone	= 5800 mg/kg (Rat)	> 15700 mg/kg (Rabbit)	= 50100 mg/m³ (Rat) 8 h

Abbreviations and acronyms
Rat: Rat

Symptoms May cause redness and tearing of the eyes. Coughing and/ or wheezing. Difficulty in breathing. 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. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Inhalation Intentional misuse by deliberately concentrating and inhaling contents may be harmful or fatal. Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract. Toxic by inhalation. (based on components). May cause drowsiness or dizziness.

Skin contact Specific test data for the substance or mixture is not available. May cause irritation. Prolonged contact may cause redness and 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.

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

Germ cell mutagenicity Contains a known or suspected mutagen. Classification based on data available for ingredients. May cause genetic defects.

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
N,N-Dimethylaniline 121-69-7	2	Group 3

Legend
IARC (International Agency for Research on Cancer)
Group 3 - Not Classifiable as to Carcinogenicity in Humans

Reproductive toxicity Classification based on data available for ingredients. Suspected of damaging fertility or the unborn child.

Target organ effects blood. Central nervous system. Central Vascular System (CVS). Eyes. kidney. liver. Respiratory system. Skin.

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). May cause damage to organs. May cause respiratory irritation. May cause drowsiness or dizziness.

May cause damage to the following organs: Central nervous system, blood system, circulatory system.

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

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

12. Ecological information

Ecotoxicity Harmful to aquatic life with long lasting effects.

Chemical name	Algae/aquatic plants	Fish	Crustacea
N,N-Dimethylaniline	EC50: =340mg/L (96h, Desmodesmus subspicatus)	LC50: =52.6mg/L (96h, Pimephales promelas) LC50: =65.6mg/L (96h, Pimephales promelas) LC50: =53.7mg/L (96h, Poecilia reticulata) LC50: =51.1mg/L (96h, Brachydanio rerio) LC50: 0.183 - 0.186mg/L (96h, Brachydanio rerio)	EC50: =5mg/L (48h, Daphnia magna)
Acetone	-	LC50: 4.74 - 6.33mL/L (96h, Oncorhynchus mykiss) LC50: 6210 - 8120mg/L (96h, Pimephales promelas) LC50: =8300mg/L (96h, Lepomis macrochirus)	EC50: 10294 - 17704mg/L (48h, Daphnia magna) EC50: 12600 - 12700mg/L (48h, Daphnia magna)

Percentage for unknown hazards 0.01 % 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
N,N-Dimethylaniline 121-69-7	1.171
Acetone 67-64-1	-0.24

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	UN1950
UN proper shipping name	Aerosols
Description	UN1950, Aerosols, 2.1, (-14°C c.c.)
Transport hazard class(es)	2.1
Marine pollutant	NP
EmS-No.	F-D, S-U
Special Provisions	63,190, 277, 327, 344, 381, 959

ADR

UN number or ID number	UN1950
UN proper shipping name	Aerosols
Description	UN1950, Aerosols, 2.2, (E)
Transport hazard class(es)	2.2
ERG Code	10L
Special Provisions	327, 625, 344, 190

IATA

UN number or ID number	UN1950
UN proper shipping name	Aerosols, flammable
Description	UN1950, Aerosols, flammable, 2.1
Transport hazard class(es)	2.1
Special Provisions	A145, A167, A802
ERG Code	10L

Japan

UN number or ID number	UN1950
UN proper shipping name	Aerosols
Description	UN1950, Aerosols, 2.1
Transport hazard class(es)	2.1
Special Provisions	63, 190, 327, 344, 959

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

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)
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:
Flammable liquids, group 4, 1st class petroleums, water-insoluble, hazard rank II, 200 liters
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

Issuing Date	13-Jul-2021
Revision date	31-Oct-2023

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.