ThreeBond

SAFETY DATA SHEET

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

Issuing Date 22-Feb-2022
Revision date 06-Dec-2023
Revision Number 3

1. Identification

Product Name PANDO 182B

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 Antirust, lubricant

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)	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	Classification not possible
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)	Category 1, Category 3
Category 1 circulatory system.	
Category 2 Cardiovascular system.	
Category 3 Target organ effects: Narcotic effects.	
Specific target organ toxicity (repeated exposure)	Category 1
Category 1 Central nervous system.	
Aspiration hazard	Category 1
Acute aquatic toxicity	Category 2

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
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H336 - May cause drowsiness or dizziness
H401 - Toxic to aquatic life
H412 - Harmful 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: circulatory system.
May cause damage to the following organs: Cardiovascular system.
Causes damage to the following organs through prolonged or repeated exposure: Central nervous system.

Precautionary statements

Prevention

• 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
• Use only outdoors or in a well-ventilated area
• 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
• Wear protective gloves/protective clothing/eye protection/face protection

Response

• IF exposed or concerned: Call a POISON CENTER or doctor
• 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

Ingestion

• 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

Inhalation

• IF INHALED: Remove person to fresh air and keep comfortable for breathing
• Call a POISON CENTER or doctor if you feel unwell

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.
Cyclohexane	110-82-7	13	(3)-2233	(3)-2233
Diphenylamine	122-39-4	0.1-<1	(3)-133	4-(12)-219
Propane	74-98-6	1-<5	(2)-3	(2)-3
Butane	-	55-<65		
Mineral oil	-	5-<15		
Thickener, Additive	-	5-<15		

This product contains ≥0.1 - <1.0% of substance (s) that are classified for Carcinogenicity Category 2. This product contains ≥0.1 - <3.0% of substance (s) that are classified for Reproductive toxicity 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
Cyclohexane	Cyclohexane			Class I designated chemical substance	1-176	629

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
Cyclohexane	Cyclohexane	110-82-7	
Diphenylamine	Diphenylamine	122-39-4	
Butane	Butane	-	
Mineral oil	Mineral oils	-	

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
Cyclohexane	Cyclohexane	110-82-7	
Butane	Butane	-	
Mineral oil	Mineral oils	-	

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
Cyclohexane	110-82-7	Priority assessment chemical substance

4. First-aid measures

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

In case of skin contact
If symptoms persist, call 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. 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. 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. May cause redness and tearing of the eyes. Burning sensation. 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. Wear personal protective clothing (see section 8). Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

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.

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
Containers may explode when heated.

Special Extinguishing Media
Cool container with water spray.

Special protective equipment and
Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

precautions for fire-fighters	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. Avoid breathing dust/fume/gas/mist/vapors/spray.
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 breathing vapors or mists. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. In case of insufficient ventilation, wear suitable respiratory equipment.
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.

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. 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
Cyclohexane 110-82-7	TWA: 150 ppm TWA: 520 mg/m^3	-	TWA: 100 ppm	-	-
Diphenylamine 122-39-4	-	-	TWA: 10 mg/m^3	5 mg/m^3	-
Propane 74-98-6	-	-	Simple asphyxiant : See Appendix F: Minimal Oxygen Content, explosion hazard	-	-

Biological monitoring indicator

Chemical name	Japan Society of Occupational Health	ACGIH
Cyclohexane 110-82-7	-	50 mg/g creatinine - urine (1,2-Cyclohexanediol) - end of shift at end of workweek

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	Viscous ocher
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	-20 °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	2.1 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	0.84	
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 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) 33,989.50 mg/kg
ATEmix (dermal) 27,191.60 mg/kg

Numerical measures of toxicity - Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Cyclohexane	= 12705 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 32880 mg/m³ (Rat) 4 h
Diphenylamine	= 1120 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	-
Propane	-	-	> 800000 ppm (Rat) 15 min

Abbreviations and acronyms
Rat: Rat
Rabbit: Rabbit

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.

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. Aspiration into lungs can produce severe lung damage. May cause pulmonary edema. Pulmonary edema can be fatal. May cause irritation of respiratory tract. May cause drowsiness or dizziness.

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 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.

Carcinogenicity

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

Chemical name	Japan	IARC
Diphenylamine 122-39-4	2	Group 2B

Legend

IARC (International Agency for Research on Cancer)
Group 2B - Possibly Carcinogenic to Humans

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. May cause drowsiness or dizziness.

Causes damage to the following organs: circulatory system.
May cause damage to the following organs: Cardiovascular 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.

Aspiration hazard May be fatal if swallowed and enters airways.

12. Ecological information

Ecotoxicity Toxic to aquatic life. Harmful to aquatic life with long lasting effects.

Chemical name	Algae/aquatic plants	Fish	Crustacea
Cyclohexane	EC50: >500mg/L (72h, Desmodesmus subspicatus)	LC50: 3.96 - 5.18mg/L (96h, Pimephales promelas) LC50: 23.03 - 42.07mg/L (96h, Pimephales promelas) LC50: 24.99 - 44.69mg/L (96h, Lepomis macrochirus) LC50: 48.87 - 68.76mg/L (96h, Poecilia reticulata)	-
Diphenylamine	EC50: =1.5mg/L (72h, Scenedesmus subspicatus)	LC50: 3.47 - 4.14mg/L (96h, Pimephales promelas)	EC50: 1.69 - 2.46mg/L (48h, Daphnia magna)

Percentage for unknown hazards 0.00999 % 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
Cyclohexane 110-82-7	3.44
Diphenylamine 122-39-4	3.4
Propane 74-98-6	1.09

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
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	1950
UN proper shipping name	Aerosols
Description	1950, Aerosols, 2.1, (D)
Transport hazard class(es)	2.1
ERG Code	10L
Special Provisions	190, 327, 344, 625

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

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

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

Poisonous and Deleterious Substances Control Law
Not applicable
Explosives Control Law
No
High Pressure Gas Safety Act
Exemption
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)
The table below indicates ingredients above the cut-off threshold considered as relevant which are listed

Chemical name	CAS No.	Chemical Substances Control Law
Cyclohexane	110-82-7	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.