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Material Safety Data Sheet
DHIN (Non-Phthalate Plasticizer)

Section 1 - Product Identification

Synonyms	:	1,2-cyclohexanedicarboxylic acid, diisononyl ester
Chemical Formula	:	$C_{26}H_{48}O_4$
Company Identification	:	Tradeasia International Pte. Limited
Address	:	133 Cecil Street # 12-03 Keck Seng Tower, Singapore Tel: +65-6227 6365 Fax: +65-6225 6286 Email: contact@chemtradeasia.com
Recommended use	:	Plasticizer

Section 2 – Hazards Identification

2.1 Classification
Material is not considered hazardous by the OSHA Hazard Communication Standard 29 CFR 1910.1200

2.2 Label elements
Signal Word None
Hazard Statements
No known significant effect or critical hazards.
Precautionary Statements
N.A.

Section 3 – Composition/Information on Ingredients

3.1 Composition comments
Formula : $C_{26}H_{48}O_4$
CAS-No. : 9004-34-6

Chemical Name	EC No/CAS No	Purity, %
Potassium silicate	474919-59-0	max. 99.9

Section 4 – First-Aid Measures

4.1. Description of first aid measures
General Advice If symptoms persist, call a physician.
Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
Skin Contact Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.
Inhalation Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.
Ingestion Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

4.2. Most important symptoms and effects, both acute and delayed
N.A.

4.3. Indication of any immediate medical attention and special treatment needed
N.A.

Section 5 – Fire Fighting Measures

5.1. Suitable Extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2. Specific hazards arising from the chemical
In a fire or if heated, the product is combustible. Cool endangered containers with water-spray.

5.3. Special protective actions for fire-fighters
Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6 – Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures
No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment. Handle in accordance with good industrial hygiene and safety practice.

6.2. Environmental precautions
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3. Methods and material for containment and cleaning up
Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Pump off product, contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations

Section 7 – Handling and Storage

7.1. Precautions for safe Handling
Put on appropriate personal protective equipment. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2. Conditions for safe storage, including any incompatibilities
Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept

upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8 – Exposure Controls/Personal Protection

8.1. Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

8.2. Individual protection measures, such as personal protective equipment (PPE)
Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.
Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a fullface particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Control of environmental exposure
Do not let product enter drains.

Section 9 – Physical and Chemical Properties

9.1. Information on basic physical and chemical properties
Form : liquid(25℃, 1atm)
Color : transparent to slightly color.
Odor : Sightly irritative order.
pH value appoximate 7
Boiling point range 240-250 ℃
Decompose temperature Not detected.
Flash point : 224 ℃ (closed cup)
Autoignition temperature Not detected.
Vapor Pressure : 9.75×10-7 mmHg @25℃
Vapor Density : Not detected.
Freezing Point : -
Density approximate 0.950 g/ml (at 25 ℃)
Solubility in water : 0.005 g/100 ml
Viscosity 47 cps (25 ℃)

Section 10 – Stability and Reactivity

10.1. Reactivity
No specific test data related to reactivity available for this product or its ingredients.

10.2. Chemical stability
Material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions
Under normal conditions of storage and use, hazardous reactions will not occur.

10.4. Conditions to avoid:
Keep away from sources of ignition: heat, sparks, open flame. Avoid extreme heat.

10.5. Incompatible materials
Keep away from strong oxidizing agents.

10.6. Hazardous decomposition products
Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11 – Toxicological Information

11.1 Health effects associated with ingredients
Acute toxicity:
Oral:
LD50/rat:>5,000mg/kg
Dermal:
LD50/rat:>2,000mg/kg
Skin irritation:
Rabbit:non-irritant
Eye irritation:
Rabbit:non-irritant
Regional effect: Not detected.
Sensitization: Not detected.
Chronic toxicity: Not detected.
Special effect: Not detected.

Section 12 – Ecological Information

12.1.Toxicity
Environmental fate and transport
(1)It might not get accumulated. It will be decomposed in body and be drained.
(2)Drain into land: It will leak into ground water. Biologic decomposition or vaporized is anticipated.
(3)Drain into water: biologic decomposition or vaporization drained is anticipated.
(4)Drain into air: It will react with hydrogen-oxygen free radical and get decomposed.

Section 13 – Disposal Considerations

13.1. Disposal methods

Dispose of in a licensed facility. Do no discharge substance/product into sewer system. Dispose of in accordance with national, state and local regulations.

Section 14 – Transport Information

14. Travel Information
Land transport: Not classified as a dangerous good under transport regulations.
Sea transport: Not classified as a dangerous good under transport regulations.
Air transport: Not classified as a dangerous good under transport regulations.

Section 15 – Regulatory Information

15.1. Safety, health and environmental regulations
SARA hazard categories (EPCRA 311/312): Not hazardous.

Section 16 : Additional Information

16.1. List of abbreviation and acronyms used in this MSDS
SDS : Safety Data Sheets
Index N° : atomic number of the element most characteristic of the properties of the substance
CAS No : Chemical Abstracts Service number
EC No : EINECS Number : European Inventory of Existing Commercial Substances
Repr. Cat. 2 : Substance presumed human reproductive toxicant
Acute Oral Cat. 5 : Substance which is of relatively low acute oral toxicity.
GHS : Globally Harmonised System of Classification and Labelling
LD_{50} : Median Lethal Dose
LC_{50} : Lethal Concentration, 50%
N.A. : Not Applicable
OSHA : Occupational Safety & Health Administration
Cal OSHA : The State of California Division of Occupational Safety and Health (DOSH)
PEL : Permissible Exposure Limits
ACGIH : American Conference of Governmental Industrial Hygienists
TLV : Threshold Limit Value
Japanese MITI : Japanese Ministry of International Trade and Industry
EC_{50} : Half maximal effective concentration
UN : United Nations
U.S. EPA TSCA Inventory: Inventory of the chemical substances manufactured or processed in the United States according to Toxic Substances Control Act compiled and published under the autority of the Environmental Protection Agency
Canadian DSL: Canadian Domestic Substances List

16.2. List of relevant hazard statements and precautionary statements used in this MSDS
Hazard Statement
H361 d: Suspected of damaging the unborn child
H319: Causes serious eye irritation
H303: May be harmful if swallowed
Precautionary Statements
Prevention
P201: Obtain special instructions before use.

P202: Do not handle until all safety precautions have been read and understood.
P281: Use personal protective equipment as required.
P264: Wash eyes thoroughly after handling.
P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response
P308 + P313: If exposed or concerned: get medical advice/attention.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313: If eye irritation persists: Get medical advice/attention.
Storage
P405: Store locked up.
Disposal
P501: Dispose of contents/container to in accordance with local regulations.

16.3. References

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For general information on the toxicology of borates see ECETOC Technical Report No. 63 (1995); Patty's Industrial Hygiene and Toxicology, 4th Edition Vol. II, (1994) Chap. 42, 'Boron'.

16.4. Disclaimer of Liability

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