1. Identification

Product identifier: Tolonate HDT 90
Recommended use of the chemical: For further information, refer to the product technical data sheet.
Identification Code: 1040013614/1040013808
Supplier's name: M.Cassab Com. e Ind. Ltda
Address: Av. das Nações Unidas, 20.882
Complement: São Paulo - SP
Supplier's phone number: 55 11 2162-7788
Emergency phone number: Suatrans – 0800 172 020/ 0800 707 7022/ 0800 707 1767/ NEXTEL: 55*2*7500

2. Hazard identification

Classification of the substance or mixture: Flammable liquids: Category 3 - Acute toxicity – inhalation: Category 4 - Eye damage/irritation: Category 2B - Sensitization – skin: Category 1 - Specific target organ toxicity (single exposure): Category 3 - Hazardous to the aquatic environment – long-term (chronic) hazard: Category 3

GHS labelling

Signal Word: Warning
Hazard Statement: H226 - Flammable liquid and vapour . H332 - Harmful if inhaled . H320 - Causes eye irritation . H317 - May cause an allergic skin reaction . H335 - May cause respiratory irritation. H412 - Harmful to aquatic life with long lasting effects .
Precautionary statements:

- **General:** Not required
- **Prevention:** P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources . No smoking., P280 - Wear protective gloves/protective clothing/eye protection/face protection., P273 - Avoid release to the environment., P260 - Do not breathe mist/vapours/spray.
- **Response:** P370 + P378 - In case of fire: Use... for extinguish., P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing., P302 + P352 - IF ON SKIN: Wash with plenty water.
- **Storage:** P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
- **Disposal:** P501 - Dispose of contents/container in accordance with local/regional/national/international

Other hazards which do not result in classification: Contains isocyanates. May produce an allergic reaction.

Other information: On contact with water carbon dioxide is released. Flammable liquid.

3. Composition/Information on ingredients

Product Type: Mixture

Hazardous ingredients or impurities and/or stabilizing additives which contribute to hazard classification:

Chemical identity	CAS Nº	Percentages or ranges of percentages
Hexamethylene diisocyanate oligomers, Isocyanurate	28182-81-2	90 %
n-butyl acetate	123-86-4	5 %
solvent naphtha (petroleum), light arom	64742-95-6	5 %
hexamethylene-di-isocyanate	822-06-0	< 0,2 %

4. First-aid measures

First-aid measures

- **Inhalation:** Move the person away from the contaminated area., Fresh air and rest., Seek immediate medical advice., Show this sheet to the doctor.
- **Skin contact:** Use appropriate protective equipment when treating a contaminated person., Immediately remove any clothing soiled by the product., Wash with soap and water., Wash immediately and thoroughly for a prolonged period (at least 15 minutes). In case of inflammation (redness, irritation, ...) obtain medical attention., Show this sheet to the doctor. Place contaminated clothing in a sealed bag for disposal.
- **Eye contact:** Immediately rinse with plenty of running water for a prolonged period, (at least 15 minutes) whilst keeping the eyes wide open., If irritation persists, consult a doctor., Show this sheet to the doctor.
- **Ingestion:** NEVER attempt to induce vomiting. Rinse mouth out with water., Do not give anything to drink., If necessary seek medical advice., Show this sheet to the doctor.

Most important symptoms/effects, acute and delayed: No further relevant information available.
Indication of immediate medical attention and special treatment: All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred., Treat symptomatically. No specific antidote available.

5. Fire-fighting measures

Suitable extinguishing media: Foam, Powder, Carbon dioxide

Unsuitable extinguishing media: Water
Specific hazards arising from the chemical: Flammable. During combustion toxic vapours are released.
Special protective actions for fire-fighters: Self-contained breathing apparatus. Complete protective clothing.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- **For non-emergency personnel:** Isolate the area. Keep out of the reach of children. Flag the danger to traffic. Notify the competent local authorities. Do not breathe vapors released. Do not approach facing the wind. Protect from vapors by staying in the wind. Keep away from sources of ignition - No smoking.
- **•For emergency responders:** Wear chemical resistant, impermeable boots, gloves, and clothing, airtight safety goggles (with indirect ventilation) for chemicals and self-contained breathing apparatus., Position yourself in the wind. Only act in the fire fighting with adequate protective equipment. Removal of ignition sources:, Eliminate all sources of fire or heat. Do not smoke, do not cause sparks. Remove any incompatible materials (acids and oxidizing materials) as soon as possible.

Environmental precautions: If possible, stagnate the leak, avoiding contact with skin, eyes and clothing. Do not allow product to reach sewage system, waterway or sewage system. If indicated, position damaged containers with leak side up. In case of significant spill, contain it with earth dumps or other inert material.
Methods and materials for containment: No information available.
Area isolation: isolate and signal the spill / leak area within a radius of at least 50 meters in all directions.
Methods and materials for cleaning up: - Prohibition: Never introduce water into a leaky container or reservoir., - Recovery: Collect as much of the recoverable product as possible in a properly labeled and tightly closed container for later recycling or disposal., - Neutralization: Absorb the non-recoverable product with dry earth or other dry absorbent., - Cleaning / decontamination: Do not throw water. Collect absorbed material, soil and contaminated materials in another separate container., - Disposal: Do not dispose of as household waste. The final disposal of these materials must be accompanied by specialists and in accordance with current environmental legislation. Incineration is recommended at an authorized facility.

7. Handling and storage

Precautions for safe handling

- **Prevention of workers exposure:** Handle in accordance with the general rules of Industrial Hygiene and Safety. Follow the instructions for use. Use only in well-ventilated areas. Never add water to this product.
- **Fire and explosion:** Use explosion-proof electrical equipment and systems. Keep away from sources of ignition - No smoking. All conductive elements of the system in contact with the product must be grounded electrically. Do not transfer under pressure of air or oxygen.
- **Precautions for safe handling:** Avoid contact with water and moisture. Avoid formation or diffusion of mists into the atmosphere. Avoid direct contact with the product. Ensure good ventilation / exhaustion at the workplace, where the procedures so require.

- **Hygiene measures**
  - **Suitable:** Handle in accordance with the general rules of Industrial Hygiene and Safety. Follow the instructions for use. Use only in well-ventilated areas. Never add water to this product.
  - **Unsuitable:** Not available.

Conditions for safe storage

- **Conditions for safe storage:** Keep the product in its original packaging. Store the product in a clean, dry, well-ventilated place away from the elements. The site should have inclined floors with ditches that allow the flow to containment reservoirs. The storage tanks should be surrounded by containment dams and have drains in case of leakage.
- **Conditions to avoid including incompatibilities:** See the detailed list for incompatible materials in section 10.
- **Packaging materials**
  - **Suitable:** Stainless steel and coated steels, aluminum.
  - **Unsuitable:** Copper, tin and other materials than recommended.

Other information: Electrical installations must comply with NEC (National Electrical Code) or IEC (International Electrical Commission) and / or ABNT (Brazilian Association of Technical Standards) standards. Observe all necessary precautions to prevent the product from accidentally draining into sewers or waterways, in case of rupture of containers or transfer systems. The floor and the place of the deposit must be impermeable, non combustible and have ditches that allow the flow for containment dikes.

8. Exposure controls/personal protection

Control parameters

- **Occupational exposure limits:** 123-86-4 n-butyl acetate: Ordinance MTb 3214/78, NR 15 - Annex 11 (Unlisted); VLE (P): Short-term value: 200 ppm, Value for long-term exposure: 150 ppm, Eye and TRS irritation; TLV (EU):, Short-term value: 940 mg / m³, 200 ppm, Long-term value: 710 mg / m³, 150 ppm;, 822-06-0 hexamethylene diisocyanate: Ordinance MTb 3214/78, NR 15 - Annex 11 - Not listed; VLE (P): Short-term value: 0.15 mg / m³, 0.02 ppm, Long exposure value: 0.075 mg / m³, 0.01 ppm;, TLV (EU): Short-term value: 0.15 mg / m³, 0.02 ppm, Long-term value: 0.075 mg / m³, 0.01 ppm., DNEL: 28182-81-2 Diisocyanate hexamethylene oligomers (by inhalation), DNEL acute: 1 mg / m³ (workers) (local effets); DNEL long term: 0.5 mg / m³ (workers) (local effets) 822, PNEC 28182-81-2 Hexamethylene diisocyanate oligomers, PNEC STP: 38.28 mg / L (I) (OECD 209), PNEC aqua: 127 g / L (Daphnia magna), PNEC flash: 1270 g / L (Daphnia magna), PNEC marine: 12.7 g / L (Daphnia magna), PNEC sediment (FW): 266.7 g / kg (equilibrium partitioning), PNEC soil: 3.2 g / kg (equilibrium partitioning), PNEC-822-06-0 hexamethylene diisocyanate, PNEC STP: 8.42 mg / L (I) (OECD 209), PNEC aqua:> 77.4 g / L (Scenedesmus subspicatus), PNEC flashing: 774 g / L (Scenedesmus subspicatus), PNEC marine:> 7.74 g / L (Scenedesmus subspicatus), PNEC sediment (FW): 13.34 mg / kg (equilibrium partitioning), PNEC sediment marine: 1.33 mg / kg (equilibrium partitioning), PNEC soil: 6 mg / kg (equilibrium partitioning)

- **Biological indicators values:** Not available.
- **Other limits and values:** Not available.

Appropriate engineering controls: Ensure good ventilation in the workplace. Collect vapors at the point of emission. Only operate closed systems.

Individual protection measures, such as personal protective equipment

- **Eye/face protection:** Safety glasses tightly closed (with indirect ventilation) for chemical products.
- **Skin protection:** Waterproof clothing and boots, depending on the type of activity.
- **Respiratory protection:** Self-contained breathing mask in case of insufficient ventilation and in case of spray application.
- **Hands protection:** Rubber gloves. The glove selection must be made according to the application and the duration of use in the workplace. Protective gloves should be chosen according to the workplace: other chemicals that can be handled, or for which physical protection (blows, heat) is required, dexterity
- **Thermal hazards:** By combustion or thermal decomposition it releases toxic gases, oxides and carbon monoxides.

Other information: Clean clothes and shoes after using them. General control methods used in Industrial Hygiene should minimize exposure to the product. Do not eat, drink or smoke while handling chemicals.

9. Physical and chemical properties

- **Appearance**
  Physical state: Liquid**; Form:** Clear**; Color:** Colorless to pale yellow.
- **Odour:** Solvent
- **Odour threshold:** Not available.
- **pH:** Not applicable (reacts with water).
- **Melting point/freezing point:** Not classified.
- **Initial boiling point:** 146°C
- **Boiling range:** Not available.
- **Flash point:** 53 ° C (closed cup).
- **Evaporation rate:** Not available.
- **Flammability (solid, gas):** Not available.
- **Lower flammability or explosive limits:** 0,6% Vol.
- **Upper flammability or explosive limits:** 7,5% Vol.
- **Vapour pressure:** 11,5 hPa a 20 °C
- **Vapour density:** Not available.
- **Relative density:** 1,12 (25 °C)
- **Solubility(ies):** In water it reacts. Miscible in: Acetones, esters, aromatic hydrocarbons (toluene, xylene) and chlorinated solvents.
- **Partition coefficient: n-octanol/water:** Not available.
- **Auto-ignition temperature:** Not available.

- **Decomposition temperature:** Not available.
- **Viscosity:** 5000 mPa.s a 25 °C
- **Additional information:** Not available.

10. Stability and reactivity

Chemical stability: Stable at room temperature and under normal conditions of use.
Reactivity: In contact with water or moisture releases carbon dioxide (CO2) which may cause increased pressures in airtight containers.
Possibility of hazardous reactions: Reacts with: acids, alcohols, amines, bases, water and aqueous solutions with strong CO2 release. (Risk of pressure rise in the closed environment) and forming an insoluble solid precipitate.
Conditions to avoid: Not available.
Incompatible materials: Subclass 2.3 - Incompatible for products of subclass 2.3 which show inhalation toxicity LC50 <1000 ppm; Subclass 4.1 - Incompatible only for products of subclass 4.1 with the following UN numbers: 3221, 3222, 3231 and 3232; Subclass 5.1 - Incompatible; Subclass 5.2 - Incompatible only for products of subclass 5.2 with the following UN numbers: 3101, 3102, 3111 and 3112; Subclass 6.1 - Incompatible only for products of subclass 6.1 of packing group 1;
Hazardous decomposition products: By combustion or thermal decomposition (pyrolysis) releases: toxic gases, oxides of carbon (CO) and carbon dioxide (CO2) and oxides of nitrogen.

11. Toxicological information

Acute toxicity: Oligomers of hexamethylene diisocyanate: Acute toxicity - Not classified. LD50 - (oral - rat):> 5000 mg / kg - (OECD401). LD50 - (skin - rabbit):> 2000mg / kg - (EPA 40 CFR 798)., Acute toxicity - Inhalation: Category 4. Harmful if inhaled.
Skin corrosion/irritation: Data do not allow classification.
Serious eye damage/irritation: Data do not allow classification.
Respiratory or skin sensitization: Skin Sensitization: Category 1. May cause allergic skin reactions.
Germ cell mutagenicity: The product is not considered mutagenic.
Carcinogenicity: Data do not allow classification.
Reproductive toxicity: Data do not allow classification.
STOT-single exposure: Specific target organ toxicity - single exposure: Category 3. May cause irritation of the respiratory tract.
STOT-repeated exposure: Data do not allow classification.
Aspiration hazard: Data do not allow classification.
Additional information: Not available.

12. Ecological information

Toxicity: Hazardous to the aquatic environment - Chronic: Category 3. Harmful to aquatic organisms, may

cause long-term effects., - Diisocyanate hexamethylene oligomers: The product has no known harmful effects on the aquatic organisms tested., - n-Butyl acetate: Harmful to aquatic organisms., - Petroleum naphtha (petroleum), light aromatic: Toxic to aquatic organisms tested., 28182-81-2 Diisocyanate hexamethylene oligomers: EC10 / 72h (static): 370 mg / l (Desmodesmus subspicatus) (EU C.3); LE50 / 48h (static): CEr50 / (0-72) (static) LL0 / 96h: 127 mg / l (Daphnia magna), > 1000 mg / l (Desmodesmus subspicatus) (EU C.3); 82.8 mg / l (Brachydanio rerio) (EU C.1), 108-65-6 1-methyl-2-methoxyethyl acetate: EC50 / 72h LC50 / 96h (static): 674.7 mg / l (Desmodesmus subspicatus); 62 mg / l (Brachydionium rerio); 18 mg / l (fish) (Flow-through)., 22-06-0 hexamethylene diisocyanate: EC50 / 48h (static): 89.1 mg / l (Daphnia magna) (EU C.2); CEr50 / (0-72) (static):> 77,4 mg / l (Desmodesmus subspicatus) (EU C.3); CL0 / 96h (static): 82.8 mg / l (Brachydanio rerio) (EU C.1); NOEC / 72h (static): 11.7 mg / l (Desmodesmus subspicatus) (EU C.3).

Persistence and degradability: Not readily biodegradable.

Bio accumulative potential: Not potentially bioaccumulative.

Mobility in soil: No further relevant information available

Other adverse effects: Formation of insoluble polyurea and / or amine derivatives. This preparation is classified as: Harmful to aquatic organisms. May cause long-term adverse effects in the aquatic environment., Do not allow undiluted product or large quantities of it to reach ground water, water courses or sewage system.

13. Disposal considerations

Disposal methods

- **Product:** Disposal should be in accordance with local regulations and should be carried out in an appropriate facility and indicated for this purpose, after consultation with the responsible local authority., Do not dispose of waste in sewage systems or water courses.
- **Used package:** Do not reuse containers., Neutralize with a mixture of water / ethanol and ammonia at 22 ° C (50/45 and 5%)., Dispose of appropriately decontaminated packaging for disposal or incineration in an authorized installation in accordance with applicable environmental legislation and regulations.

14. Transport information

National and international regulations:

Land Transport:

- **UN Number:** 1866
- **UN Proper Shipping Name:** RESIN SOLUTION, flammable
- **Class or division:** 3 - Flammable liquids
- **Risk number:** 30
- **UN Packing group:** III
- **Technical name:** TOLONATE HDT 90

- **Environmental hazards:** No
- **Terrestrial (Road) Transport Regulation:** ONU - Orange Book

Additional Regulation: Product classified as dangerous for transport. (Resolution 5232).

15. Regulatory information

Safety, health and environmental regulations specific for the product:
Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

16. Other information

Other information that does not belong in other sections:
This Safety Data Sheet (SDS) has been prepared based on current knowledge about chemicals and provides information about protection, safety, health and environment. It is warned that any chemical handling requires prior knowledge of its hazards by the user. The user company is responsible to promote the training of its employees about the potential product risks.

References: [ECHA] EUROPEAN CHEMICAL AGENCY. Available in: http://echa.europa.eu/
[HSNO] NEW ZEALAND HSNO Chemical Classification and Information Database (CCID)
[OSHA] OSHA'S Hazard Communication. Available in: https://www.osha.gov/dsg/hazcom/
[GHS] Globally Harmonized System of Classification and Labelling of Chemicals

Subtitles and abbreviations: ACGIH - American Conference of Governamental Industrial
BCF - Bioconcentration factor
CAS - Chemical Abstracts Service