

Product: Tolonate D2

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1. Identification

Product identifier: Tolonate D2

Recommended use of the chemical: Manufacture of paints and varnishes.

Identification Code: 1040013665

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 - Skin corrosion/irritation: Category 2 - Sensitization – skin: Category 1B - Specific target organ toxicity (single exposure): Category 3 - Specific target organ toxicity (repeated exposure): Category 2 - Hazardous to the aquatic environment – long-term (chronic) hazard: Category 2

GHS labelling



Signal Word: Warning

Hazard Statement: H226 - Flammable liquid and vapour . H315 - Causes skin irritation . H317 - May cause an allergic skin reaction . H336 - May cause drowsiness or dizziness. H373 - May cause damage to organs. H411 - Toxic to aquatic life with long lasting effects .

Precautionary statements:

- **General:** Not required
- **Prevention:** P280 - Wear protective gloves/protective clothing/eye protection/face protection., P264 - Wash... thoroughly after handling., P271 - Use only outdoors or in a well-ventilated area., P260 - Do not breathe dust/fume/gas/mist/vapours/spray., P273 - Avoid release to the environment.
- **Response:** P303 + P361 + P353 - IF ON SKIN (on hair): take off immediately all contaminated clothing. Rinse skin with water [or shower]., P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing., P310 - Immediately call a POISON CENTER or doctor / physician., P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. In case of contact lenses, remove them if it is easy. Continue rinsing.
- **Storage:** P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.
- **Disposal:** P501 - Dispose of contents / container for final destination, according to the legislation.

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Other hazards which do not result in classification: No data available.

Other information: Not available.

3. Composition/Information on ingredients

Product Type: Mixture

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

Chemical identity	CAS N°	Percentages or ranges of percentages
Hexamethylene diisocyanate, oligomerisation product, blocked with 2-butanone oxime	85940-94-9	> 75%
Petroleum naphtha (petroleum), light aromatic	64742-95-6	> 25%
Hexamethylene Diisocyanate	822-06-0	< 0,2%
2-Butanone-Oxime	96-29-7	< 1,0%

4. First-aid measures

First-aid measures

- **Inhalation:** Remove victim to fresh air and dispose of in accordance with local regulations. Call a physician immediately. Show this to physician.
- **Skin contact:** Wash immediately, thoroughly and extensively (15 minutes at least). In case of fire (corrosion, irritation, among others) consult a doctor.
- **Eye contact:** Rinse immediately with running water for an extended period of time, keeping the eyes wide open (15 minutes at least). Seek medical attention if irritation persists. Show this to physician.
- **Ingestion:** NEVER induce vomiting. Do not give anything to drink. Consult a doctor if necessary.

Most important symptoms/effects, acute and delayed: Not available.

Indication of immediate medical attention and special treatment: Symptomatic treatment. There are no specific antidotes. No further relevant information is available.

5. Fire-fighting measures

Suitable extinguishing media: Alcohol-resistant foam, Dry chemical (PQS), carbon dioxide (CO₂).

Unsuitable extinguishing media: None. In case of fire in the vicinity, use suitable extinguishing agents.

Specific hazards arising from the chemical: Flammable. There may be an increase in the internal pressure of containers and hermetically sealed containers. During combustion releases toxic vapors.

Special protective actions for fire-fighters: Complete fire protection and self-contained breathing apparatus.

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6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- **For non-emergency personnel:** Keep away from sources of ignition.
- **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.

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: Pick up the remainders with absorbent material (eg sand, kieselguhr, universal binder). Dispose of the absorbed material in accordance with the.

Area isolation: Insulation distance: 50 meters radius. Evacuation distance: 300 to 800 meters radius

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:** Use personal protective equipment (PPE) to prevent product contact with eyes, skin, mucous membranes and respiratory tract.
- **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:** Do not heat. Do not spray near naked flames or sources of ignition. 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:** Do not eat, drink, smoke or sneeze while working.

Conditions for safe storage

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- **Conditions for safe storage:** Keep the product in its original packaging. Store in a location where the temperature does not exceed 60 ° C. 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 of incompatible materials in section 10 - Stability and Reactivity.
- **Packaging materials**
 - **Suitable:** Store in original, unopened containers only. Suitable containers: Steel drums, watertight containers and stainless steel containers under inert and dry gas. Stainless steel and coated steels, aluminum
 - **Unsuitable:** Copper, can 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 Standards Association, Techniques). Observe all the necessary provisions to prevent the product from accidentally draining into drains or water courses, 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:** 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, Value for long-term exposure: 0.075 mg / m³, 0.01 ppm, TLV (EU) - Short-term value: 0.15 mg / m³, 0.02 ppm, Value for long-term exposure: 0.075 mg / m³, 0.01 ppm, DNEL, 822-06-0 hexamethylene diisocyanate by inhalation, DNEL acute 0.07 mg / m³ (workers) (local / systemic), DNEL long term 0,035 mg / m³ (workers) (local / systemic 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 2.6 mg / kg (equilibrium partitioning)
- **Biological indicators values:** Not applicable.
- **Other limits and values:** Not applicable.

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.

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- **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 is required.
- **Thermal hazards:** By combustion or thermal decomposition it releases toxic gases, oxides and carbon monoxides.

Other information: Not applicable.

9. Physical and chemical properties

- **Appearance**
Physical state: Liquid; **Form:** Liquid; **Color:** Colorless to pale yellow.
- **Odour:** solvent characteristic
- **Odour threshold:** Not determined
- **pH:** Not applicable (reacts with water).
- **Melting point/freezing point:** Not determined
- **Initial boiling point:** Not determined
- **Boiling range:** 162 - 178 °C
- **Flash point:** 49 °C (Vaso fechado).
- **Evaporation rate:** Not determined
- **Flammability (solid, gas):** Not determined
- **Lower flammability or explosive limits:** 0,6% Vol
- **Upper flammability or explosive limits:** 7,0% Vol
- **Vapour pressure:** 5 hPa a 20 °C
- **Vapour density:** Not determined
- **Relative density:** 1,06 (25 °C)
- **Solubility(ies):** In water: Not applicable: Reacts with water.
In organic solvents: Soluble in: acetones, esters, aromatic hydrocarbons and esters.
- **Partition coefficient: n-octanol/water:** Diisocyanate hexamethylene oligomers: Not applicable (reacts with water and / or octanol). Methoxypropyl acetate: Potentially bioaccumulable.
- **Auto-ignition temperature:** 450 °C
- **Decomposition temperature:** Not determined
- **Viscosity:** 3500 mPa.s a 25 °C
- **Additional information:** Not determined

10. Stability and reactivity

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Chemical stability: Stable at room temperature and under normal conditions of use

Reactivity: Not available.

Possibility of hazardous reactions: Reacts with: acids, 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: In contact with water or moisture releases carbon dioxide (CO₂) which may cause increased pressures in airtight containers.

Incompatible materials: Reacts with: acids, amines, bases, water and aqueous solutions with strong CO₂ release. (Risk of pressure rise in the closed environment) and forming an insoluble solid precipitate.

Hazardous decomposition products: By combustion or thermal decomposition (pyrolysis) releases: toxic gases, oxides of carbon (CO) and carbon dioxide (CO₂) and oxides of nitrogen. During use, it releases: 2-Butanone-oxime - Amount, Potentially releasable: 24.4% by weight of the blend.

11. Toxicological information

Acute toxicity: Acute toxicity - Not classified., LD₅₀ - (oral - rat):> 2000 mg / kg - (OECD 401). LD₀ - (skin - rat):> 2667mg / kg - (OECD Guideline 402), LC₅₀ (4h) (inhalation - rat):> 2757mg / m³.

Skin corrosion/irritation: Causes skin irritation

Serious eye damage/irritation: Data does not allow classification

Respiratory or skin sensitization: May cause allergic skin reactions.

Germ cell mutagenicity: Data does not allow classification

Carcinogenicity: Data do not allow classification. Hepatic tumors were observed only in male rats and rats subjected to strong concentrations of 2-butanone oxime (MEKO).

Reproductive toxicity: Data does not allow classification

STOT-single exposure: May cause drowsiness and dizziness

STOT-repeated exposure: May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard: Not Classified

Additional information: Not available

12. Ecological information

Toxicity: 85940-94-9 Hexamethylene diisocyanate, oligomerisation product, blocked with 2-butanone oxime, CE₅₀ / 3h> 10000 mg / l (?) (OECD 209), EC₅₀ / 48h> 1.61 mg / l (Daphnia magna) (OECD 202), CE₅₀ / 72h> 8.1 mg / l (Desmodesmus subspicatus) (OECD 201), LC₅₀ / 96h 141.4 mg / l (Danio rerio) (OECD 203)

Persistence and degradability: 28182-81-2 Hexamethylene diisocyanate oligomers, BOD₂₈ 9% (-) (OECD 301C)

Bio accumulative potential: Petroleum naphtha (petroleum), light aromatic: potentially bioaccumulative

Mobility in soil: No further relevant information available

Other adverse effects: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. Disposal considerations

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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 and water courses.
- **Used package:** Do not reuse containers. 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 D2
- **Environmental hazards:** Yes
- **Terrestrial (Road) Transport Regulation:** ONU - Orange Book

Sea Transport:

- **IMDG/GGVSea/ONU:** UN 1866
- **Transport hazard class(es):** 3 - Flammable liquids
- **UN Packing group:** III
- **Technical name:** RESIN SOLUTION, flammable
- **Marine Pollutant:** Yes
- **Waterway Transport Regulation:** IMDG Code.

Aerial Transport:

- **ICAO/IATA/ONU:** UN 1866
- **Transport hazard class(es):** 3 - Flammable liquids
- **UN Packing group:** III
- **Technical name:** RESIN SOLUTION, flammable
- **Environmental hazards:** Yes
- **Aerial Transport Regulation:** IATA.

Additional Regulation: Not available

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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