SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : LEWATIT TP 272
Material number : 56849886
Recommended use : Ion exchange, resins and catalysts

Manufacturer or supplier’s details
Supplier : Lanxess, S.A. de C.V.
          Ejército Nacional No. 579 piso 3
          Col. Granada
          CP 11520
          Mexico
Telephone : +525552624300
Emergency telephone : SETIQ 800-00-214-00, 55-59-15-88
                     24 horas (Transporte): 55 52-62-43-00
                     Lunes a Viernes de 8:00 a 17:00 hrs

SECTION 2. HAZARDS IDENTIFICATION

This product has been classified according to the Global Harmonized System of the United Nations (Purple Book Rev. 5) and in accordance with the NOM-018-STPS-2015.

Eye irritation : Category 2A
Short-term (acute) aquatic hazard : Category 2
Long-term (chronic) aquatic hazard : Category 2

GHS label elements
Hazard pictograms

Signal Word : Warning
Hazard Statements : H319 Causes serious eye irritation.
                   H411 Toxic to aquatic life with long lasting effects.
Precautionary Statements : Prevention:
                          P264 Wash skin thoroughly after handling.
                          P273 Avoid release to the environment.
                          P280 Wear eye protection/ face protection.
Response:
Section 3. Composition/Information on ingredients

Substance / Mixture: Mixture
Chemical nature: styrene-divinylbenzene copolymer, Contains: isododecane

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>bis(2,4,4-trimethylpentyl)phosphinic acid</td>
<td>83411-71-6</td>
<td>&gt;= 30 &lt; 50</td>
</tr>
<tr>
<td>Isododecane</td>
<td>93685-81-5</td>
<td>&gt;= 20 &lt; 25</td>
</tr>
</tbody>
</table>

Section 4. First Aid Measures

If inhaled: If inhaled, remove to fresh air. Get medical attention if symptoms occur.
If unconscious, place in recovery position and get medical attention immediately.
Maintain open airway.
If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

In case of skin contact: Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash contaminated clothing before reuse. Get medical attention if symptoms occur.

In case of eye contact: Get medical attention immediately.
In case of contact, flush eyes with plenty of water for at least 30 minutes. Use fingers to ensure that eyelids are separated and that the eye is being irrigated. Remove contact lenses, if present and easy to do. Continue rinsing.

If swallowed: Rinse mouth with water. Do not induce vomiting unless directed to do by medical personnel. Get medical attention if symptoms occur.

Most important symptoms and effects, both acute and delayed
Symptoms: Eye: Causes irritation with symptoms of reddening, tearing, stinging, and swelling.

Effects: See Section 11 for more detailed information on health effects and symptoms.

Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training.

Notes to physician: See Section 11 for more detailed information on health effects and symptoms.

Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: In case of fire, use water spray (fog), foam, dry chemical or CO₂.

Unsuitable extinguishing media: None known.

Specific hazards during fire fighting: Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products: Carbon dioxide (CO2)
Carbon monoxide
Oxides of phosphorus

Special protective equipment 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

Personal precautions, protective equipment and emergency procedures: No action shall be taken involving any personal risk or without suitable training.
Put on appropriate personal protection equipment.
Do not touch or walk through spilled material.
Evacuate personnel to safe areas.
Keep unnecessary and unprotected personnel from entering.

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up: Move containers from spill area.
Use a suitable vacuum cleaner.
High efficiency particulate air filter (HEPA filter)
Keep in suitable, closed containers for disposal.
Dispose of wastes in an approved waste disposal facility.
Do not dry sweep.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling:
Avoid formation of respirable particles.
Do not breathe vapors/dust.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage:
Take action to prevent static discharges.
Keep away from direct sunlight or strong incandescent light.
Do not allow to dry.
Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Observe label precautions.
Electrical installations / working materials must comply with the technological safety standards.

Recommended storage temperature:
-20 - 40 °C

Further information on storage stability:
It is recommended to store ion exchange resins at temperatures above the freezing point of water. If the resin should become frozen, the resin should not be mechanically handled and should be left to thaw out gradually at ambient temperature. It must be completely thawed before handling or use. No attempt should be made to accelerarate the thawing process.

No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSOAL PROTECTION

Ingredients with workplace control parameters:
Contains no substances with occupational exposure limit values.

Engineering measures:
Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Personal protective equipment:
Respiratory protection:
Dust-protection mask if there is a risk of dust formation.
Filter type : P1 filter

Hand protection
Material : Polyvinyl chloride - PVC
Wearing time : < 60 min

Material : Fluorinated rubber - FKM
Wearing time : < 60 min

Material : Nitrile rubber - NBR
Wearing time : < 60 min

Material : Polychloroprene - CR
Wearing time : < 60 min

Remarks : After contamination with product change the gloves immediately and dispose of them according to relevant national and local regulations. The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Tightly fitting safety goggles
Skin and body protection : Wear suitable protective clothing.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location. Appropriate techniques should be used to remove potentially contaminated clothing.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state : solid
Appearance : beads
Color : white, opaque
Odor : characteristic
Odor Threshold : No data available
pH : No data available
Melting point/freezing point : No data available
Boiling point/boiling range : No data available
Flash point : No data available
Evaporation rate : No data available
Flammability (solid, gas) : No data available
Burning number : 5 (20 °C)
Method: VDI 2263-1
5 (100 °C)
Method: VDI 2263-1
Upper explosion limit / Upper flammability limit : No data available
Lower explosion limit : No data available
Vapor pressure : No data available
Relative vapor density : No data available
Relative density : No data available
Density : 0.97 g/cm³ (20 °C)
Bulk density : 500 - 550 kg/m³
Solubility(ies) Water solubility : insoluble
Partition coefficient: n-octanol/water : No data available
Ignition temperature : No data available
Decomposition temperature : No data available
Viscosity : No data available
Explosive properties : No data available
Oxidizing properties : No data available
Molecular weight : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.
Chemical stability : The product is chemically stable.
Possibility of hazardous reactions: No dangerous reaction known under conditions of normal use.

Conditions to avoid: Take measures to prevent the build up of electrostatic charge.

Incompatible materials: Strong oxidants, e.g. nitric acid, can cause violent reactions if they come into contact with ion exchange resins.

Hazardous decomposition products: No decomposition if stored normally.

SECTION 11. TOXICOLOGICAL INFORMATION

The most important known symptoms and effects are described in Section 2 and/or Section 4.

Acute toxicity
Not classified based on available information.

Product:
Acute oral toxicity: Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method

Acute inhalation toxicity: Acute toxicity estimate: > 10 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

Acute dermal toxicity: Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method

Components:
bis(2,4,4-trimethylpentyl)phosphinic acid:
Acute oral toxicity: LD50 (Rat): > 3,500 mg/kg

Acute dermal toxicity: LD50 (Rat): > 2,000 mg/kg

Isododecane:
Acute oral toxicity: LD50 (Rat, male and female): > 5,000 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity: LC50 (Rat, male and female): > 4.951 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Method: OECD Test Guideline 403
GLP: yes
Remarks: Dosage caused no mortality
Highest producible concentration.

Acute dermal toxicity: LD50 (Rabbit, male and female): > 5,000 mg/kg
Method: OECD Test Guideline 402
Skin corrosion/irritation
Not classified based on available information.

Product:
Remarks: May cause skin irritation in susceptible persons.
Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Components:

bis(2,4,4-trimethylpentyl)phosphinic acid:
Species: Rabbit
Exposure time: 24 h
Remarks: Mild skin irritation

Isododecane:
Species: Rabbit
Exposure time: 4 h
Method: OECD Test Guideline 404
Result: No skin irritation
GLP: yes

Serious eye damage/eye irritation
Causes serious eye irritation.

Product:
Remarks: May cause irreversible eye damage.

Components:

bis(2,4,4-trimethylpentyl)phosphinic acid:
Species: Rabbit
Result: Irritating to eyes.

Isododecane:
Species: Rabbit
Result: No eye irritation

Respiratory or skin sensitization

Skin sensitization
Not classified based on available information.

Respiratory sensitization
Not classified based on available information.
Components:

bis(2,4,4-trimethylpentyl)phosphinic acid:
Remarks: No known sensitizing effect.

Isododecane:
Routes of exposure: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: Did not cause sensitization on laboratory animals.
GLP: yes

Germ cell mutagenicity
Not classified based on available information.

Components:

bis(2,4,4-trimethylpentyl)phosphinic acid:
Genotoxicity in vitro: Test system: Bacteria
    Method: OECD Test Guideline 471
    Result: negative

Isododecane:
Genotoxicity in vitro: Test system: Bacteria
    Metabolic activation: with and without metabolic activation
    Method: OECD Test Guideline 471
    Result: negative

    Test system: Mammalian-Animal
    Metabolic activation: with and without metabolic activation
    Method: OECD Test Guideline 476
    Result: negative

    Test system: Mammalian-Animal
    Metabolic activation: with and without metabolic activation
    Method: OECD Test Guideline 473
    Result: negative
    GLP: yes

    Test system: Mammalian-Animal
    Metabolic activation: with and without metabolic activation
    Method: OECD Test Guideline 479
    Result: negative

Genotoxicity in vivo: Species: Mammalian-Animal
    Application Route: Inhalation
    Method: OECD Test Guideline 478
    Result: negative

    Species: Mammalian-Animal
    Application Route: Oral
    Method: OECD Test Guideline 474
Carcinogenicity
Not classified based on available information.

Components:
Isododecane:
Species: Mouse, (male)
Application Route: Inhalation
Exposure time: 105 weeks
Frequency of Treatment: 6 hours/day
NOAEL: >= 2,200 mg/m³
Method: OECD Test Guideline 453
Result: negative

Species: Mouse, (female)
Application Route: Inhalation
Exposure time: 105 weeks
Frequency of Treatment: 6 hours/day
NOAEL: 1,100 mg/m³
Method: OECD Test Guideline 453
Result: negative

Reproductive toxicity
Not classified based on available information.

Components:
Isododecane:
Effects on fetal development:
Species: Rat, female
Application Route: Inhalation
Duration of Single Treatment: 15 d
Frequency of Treatment: 6 hours/day
General Toxicity Maternal: NOAEL: >= 5,220 mg/m³
Developmental Toxicity: NOAEL: >= 5,220 mg/m³
Method: OECD Test Guideline 414
Result: No adverse effects.

STOT-single exposure
Not classified based on available information.

STOT-repeated exposure
Not classified based on available information.

Repeated dose toxicity

Components:
Isododecane:
Species: Rat, male and female
NOAEL: >= 5,000 mg/kg
Application Route: Oral
Exposure time: 3 Months
Number of exposures: 7 days/week
Method: OECD Test Guideline 408
GLP: yes
Remarks: Subchronic toxicity

Species: Rat, male and female
NOAEL: >= 1.16 mg/l
Application Route: Inhalation
Test atmosphere: vapor
Exposure time: 13 Weeks
Number of exposures: 6 hours/day
Method: OECD Test Guideline 413
GLP: yes
Remarks: Subchronic toxicity

Aspiration toxicity
Not classified based on available information.

Components:

Isododecane:
May be fatal if swallowed and enters airways.

Further information

Product:
Remarks: Solvents may degrease the skin.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

bis(2,4,4-trimethylpentyl)phosphinic acid:
Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 22 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 2.9 mg/l
Exposure time: 48 h

Isododecane:
Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 1,000 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
GLP: yes
Remarks: Fresh water

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): > 1,000 mg/l
aquatic invertebrates

Exposure time: 48 h
Method: OECD Test Guideline 202
GLP: yes
Remarks: Fresh water

Toxicity to algae

EC50 (Pseudokirchneriella subcapitata (microalgae)): > 1,000 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
GLP: yes
Remarks: Fresh water

NOAEL (No observed adverse effect level) (Pseudokirchneriella subcapitata (microalgae)): 1,000 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
GLP: yes
Remarks: Fresh water

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

NOAEL (No observed adverse effect level) (Daphnia magna (Water flea)): 1 mg/l
Exposure time: 21 Days
Method: OECD Test Guideline 211
GLP: yes
Remarks: Fresh water

No toxicity at the limit of solubility.

NOEC (Daphnia magna (Water flea)): 0.011 mg/l
Exposure time: 21 Days
Method: OECD Test Guideline 211
Remarks: Fresh water

Persistence and degradability

Components:

**bis(2,4,4-trimethylpentyl)phosphinic acid:**

Biodegradability: Result: Not readily biodegradable. Biodegradation: 5.9 % Exposure time: 28 d

**Isododecane:**

Biodegradability: aerobic
Bioaccumulative potential

Components:

bis(2,4,4-trimethylpentyl)phosphinic acid:
Partition coefficient: n-octanol/water : log Pow: 5.9

Isododecane:
Partition coefficient: n-octanol/water : log Pow: 6.96
Method: calculated

Mobility in soil
No data available

Other adverse effects

Product:
Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life with long lasting effects.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste from residues : The generation of waste should be avoided or minimized wherever possible. Dispose of wastes in an approved waste disposal facility. This material and its container must be disposed of in a safe way. The product should not be allowed to enter drains, water courses or the soil. Waste disposal should be in accordance with existing federal, state, provincial and/or local environmental controls.

SECTION 14. TRANSPORT INFORMATION

Domestic regulation

NOM-002-SCT
UN number : UN 3077
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (BIS(2,4,4-TRIMETHYLpentyl)PHOSPHINIC ACID)
Class : 9
Packing group : III
Labels : 9

Print Date: 06/06/2020
Environmentally hazardous : yes

International Regulations
IATA-DGR
UN/ID No. : UN 3077
Proper shipping name : Environmentally hazardous substance, solid, n.o.s. (BIS(2,4,4-TRIMETHYL-PENTYL)PHOSPINIC ACID)
Class : 9
Packing group : III
Labels : 9

Packing instruction (cargo aircraft) : 956: 400.00 KG
Packing instruction (passenger aircraft) : 956: 400.00 KG
Environmentally hazardous : yes

IMDG-Code
UN number : UN 3077
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (BIS(2,4,4-TRIMETHYL-PENTYL)PHOSPINIC ACID)
Class : 9
Packing group : III
Labels : 9

Marine pollutant : yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable for product as supplied.

Hazard Statements : Environmentally hazardous substance.
Irritating to skin and eyes.
Keep separated from foodstuffs

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

The following Regulations are applicable to the handling of chemicals in the workplace:

- Federal Regulation on Safety and Health at the Workplace.
- NOM-005-STPS concerning the Conditions of Health and Safety in the Workplace for the Handling, Transport and Storage of Hazardous Chemicals.
- NOM-017-STPS - Personal Protective Equipment Selection, Use and Handling in the workplace.
- NOM-010-SCT Compatibility and segregation for the Storage and Transportation of Hazardous Substances, Materials and Wastes

SECTION 16. OTHER INFORMATION

Revision Date : 06/04/2020

This information is furnished without warranty, express or implied. This information is believed to be accurate to the best knowledge of our knowledge. The information provided in this Safety Data Sheet (SDS) is correct to the best of our knowledge, information and belief at the date of its publication. We assume no legal responsibility for use of or reliance upon the information in this SDS.