1. PRODUCT AND COMPANY IDENTIFICATION

Product code: 56849886
Chemical nature: styrene-divinylbenzene copolymer, Contains:

Manufacturer or supplier's details
Supplier: 朗盛化学(中国)有限公司
上海市黄浦区海滨路150号企业天地商业中心5号楼6楼
200021，中华人民共和国
Telephone: +86 21 61096666
E-mail address of person responsible for the SDS: lxs-sds-china@lanxess.com
Emergency telephone number: +86 532 83889090
Supplier: LANXESS Chemical (China) Co., Ltd.
6th Floor, 5 Corporate Avenue
No. 150, Hu Bin Road Shanghai, 200021, People's Republic of China
Telephone: +86 21 61096666
E-mail address of person responsible for the SDS: lxs-sds-china@lanxess.com
Emergency telephone: +86 532 83889090

Recommended use of the chemical and restrictions on use
Recommended use: Ion exchange, resins and catalysts

2. HAZARDS IDENTIFICATION

Emergency Overview

| Appearance | beads |
| Colour     | white, opaque |
| Odour      | characteristic |

May be fatal if swallowed and enters airways. Causes serious eye irritation. Toxic to aquatic life with long lasting effects.

GHS Classification

| Serious eye damage/eye irritation | Category 2A |
| Aspiration hazard                | Category 1 |
| Short-term (acute) aquatic hazard| Category 2 |
SAFETY DATA SHEET
according to GB/T 16483 and GB/T 17519
LEWATIT TP 272

Version 1.0  Revision Date: 2019/04/18  SDS Number: 10300013084  Date of last issue:  
Country / Language: CN / 6N

Long-term (chronic) aquatic hazard: Category 2

GHS label elements
Hazard pictograms:

Signal word: Danger
Hazard statements:
H304 May be fatal if swallowed and enters airways.
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:
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P331 Do NOT induce vomiting.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P391 Collect spillage.
Storage:
P405 Store locked up.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Physical and chemical hazards
Not classified based on available information.

Health hazards
Causes serious eye irritation. May be fatal if swallowed and enters airways.

Environmental hazards
Toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Other hazards which do not result in classification
None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS
Substance / Mixture: Mixture

Print Date: 2020/05/22
4. FIRST AID MEASURES

General advice : Move out of dangerous area.
    Show this safety data sheet to the doctor in attendance.
    Symptoms of poisoning may appear several hours later.
    Do not leave the victim unattended.

If inhaled : Remove victim to fresh air and keep at rest in a position comfortable for breathing.
    If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
    It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
    Get medical attention if adverse health effects persist or are severe.
    If unconscious, place in recovery position and get medical attention immediately.
    Maintain open airway.
    Loosen tight clothing such as a collar, tie, belt or waistband.

In case of skin contact : Wash skin thoroughly with soap and water or use recognized skin cleanser.
    Remove contaminated clothing and shoes.
    Get medical attention if symptoms occur.
    Wash contaminated clothing before re-use.
    Thoroughly clean shoes before reuse.

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 10 minutes.
    Remove contact lenses.
    Protect unharmed eye.
    Keep eye wide open while rinsing.
    If eye irritation persists, consult a specialist.

If swallowed : Call a physician immediately.
    If swallowed, call a poison control centre or doctor immediately.
    Take victim immediately to hospital.
    Rinse mouth with water.
Remove victim to fresh air and keep at rest in a position comfortable for breathing.
If conscious, make the victim drink the following:
Give small amounts of water to drink.
Stop if the exposed person feels sick as vomiting may be dangerous.
Aspiration hazard if swallowed - can enter lungs and cause damage.
Do NOT induce vomiting.
If vomiting occurs, the head should be kept low so that vomit does not enter the lungs.
If unconscious, place in recovery position and get medical attention immediately.
Never give anything by mouth to an unconscious person.
Keep respiratory tract clear.
Loosen tight clothing such as a collar, tie, belt or waistband.
If symptoms persist, call a physician.
Immediately give large quantities of water to drink.

Most important symptoms and effects, both acute and delayed:
See Section 11 for more detailed information on health effects and symptoms.
May be fatal if swallowed and enters airways.
Causes serious eye irritation.

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

5. FIREFIGHTING 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 firefighting:
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

Specific extinguishing methods:
Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for firefighters:
Wear self-contained breathing apparatus for firefighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment:
Use personal protective equipment.
SAFE DATA SHEET
according to GB/T 16483 and GB/T 17519
LEWATIT TP 272

<table>
<thead>
<tr>
<th>Version</th>
<th>Revision Date</th>
<th>SDS Number</th>
<th>Date of last issue</th>
<th>Country / Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>2019/04/18</td>
<td>103000013084</td>
<td>-</td>
<td>CN / 6N</td>
</tr>
</tbody>
</table>

**Active equipment and emergency procedures**
Avoid dust formation.
Avoid breathing dust.
Ensure adequate ventilation.

**Environmental precautions**
Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
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.

## 7. HANDLING AND STORAGE

### Handling

**Advice on protection against fire and explosion**
Avoid dust formation.
Provide appropriate exhaust ventilation at places where dust is formed.

**Advice on safe handling**
Avoid formation of respirable particles.
Do not breathe vapours/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.

**Avoidance of contact**
Strong oxidizing agents

### Storage

**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**
No decomposition if stored and applied as directed.
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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

Personal protective equipment
Respiratory protection : Dust-protection mask if there is a risk of dust formation.
  Filter type : P1 filter
Eye/face protection : Eye wash bottle with pure water
  Tightly fitting safety goggles
  Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection : Wear protective clothing.
  Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hand protection
  Material : Fluorinated rubber - FKM
  Wearing time : < 60 min
  Material : Polyvinyl chloride - PVC
  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.

Hygiene measures : When using do not eat or drink.
  When using do not smoke.
  Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : beads
Colour : white, opaque
Odour : characteristic
Odour 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
Vapour pressure: No data available
Relative vapour 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

10. STABILITY AND REACTIVITY

Reactivity: No decomposition if stored and applied as directed.
Chemical stability: No decomposition if stored and applied as directed.

Possibility of hazardous reactions: No decomposition if stored and applied as directed.

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

Incompatible materials: Strong oxidizing agents

Hazardous decomposition products: No decomposition if stored and applied as directed.

11. TOXICOLOGICAL INFORMATION

Acute toxicity
Not classified based on available information.

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

Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated:
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: vapour
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 dermati-
Components:

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

Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated:
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.

Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated:
Species: Rabbit
Result: No eye irritation

Respiratory or skin sensitisation

Skin sensitisation
Not classified based on available information.

Respiratory sensitisation
Not classified based on available information.

Components:

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

Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated:
Exposure routes: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: Did not cause sensitisation 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

Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated:
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
   Result: negative
   GLP: yes

Carcinogenicity
Not classified based on available information.

Components:

Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated:
Species: Mouse, (male)
Application Route: Inhalation
Exposure time: 105 weeks
Frequency of Treatment: 6 hours/day
NOAEL: \(\geq 2,200 \text{ mg/m}^3\)
Method: OECD Test Guideline 453
Result: negative

Species: Mouse, (female)
Application Route: Inhalation
Exposure time: 105 weeks
Frequency of Treatment: 6 hours/day
NOAEL: \(1,100 \text{ mg/m}^3\)
Method: OECD Test Guideline 453
Result: negative

**Reproductive toxicity**
Not classified based on available information.

**Components:**

**Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated:**

Effects on foetal development:
Species: Rat, female
Application Route: Inhalation
Duration of Single Treatment: 15 d
Frequency of Treatment: 6 hours/day
General Toxicity Maternal: NOAEL: \(\geq 5,220 \text{ mg/m}^3\)
Developmental Toxicity: NOAEL: \(\geq 5,220 \text{ mg/m}^3\)
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:**

**Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated:**

Species: Rat, male and female
NOAEL: \(\geq 5,000 \text{ mg/kg}\)
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: \(\geq 1.16 \text{ mg/l}\)
Application Route: Inhalation
Test atmosphere: vapour
Exposure time: 13 Weeks
Number of exposures: 6 hours/day
Method: OECD Test Guideline 413
GLP: yes
Remarks: Subchronic toxicity

**Aspiration toxicity**
May be fatal if swallowed and enters airways.

**Product:**
May be fatal if swallowed and enters airways.

**Components:**

**Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated:**
May be fatal if swallowed and enters airways.

**Further information**

**Product:**
Remarks: Solvents may degrease the skin.

### 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

**Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated:**

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 aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1,000 mg/l
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
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) : 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

Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated:
Biodegradability : aerobic  
Result: Not readily biodegradable.  
Biodegradation: 31.3 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F  
GLP: no

Bioaccumulative potential

Components:

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

Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated:
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.

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues: The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

Contaminated packaging: Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.

14. TRANSPORT INFORMATION

National Regulations

China-DG GB 6944/12668
UN number: UN 3077
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (BIS(2,4,4-TRIMETHYLPENTYL)PHOSPINIC ACID)
Class: 9
Packing group: III
Labels: 9

Environmentally hazardous: yes

Transportation Notes:
- Appropriate & sufficient fire-fighting facilities and spill emergency handling apparatus should be equipped with the transport vehicles.
In case of products with explosive, flammable, self-reactive, pyrophoric, self-heating and oxidizing properties:
- Tank cars used in transport should be equipped with a grounding chain; a porous separator plate may be provided in the tank car to reduce static electricity shocks.
- The exhaust pipes of vehicles used for shipping this product must be equipped with fire retard-
ant devices. The use of mechanical equipment or tools prone to sparking is prohibited.
- Protect against exposure to sun, rain and high temperatures during transit; in winter, transport should ideally be in the morning or evening.
- Keep away from fire, heat and high temperature zones during stopovers.
- When transporting over public roads, select routes compliant with regulations and do not stop over in residential or densely populated areas.

International Regulations

IATA-DGR
UN/ID No. : UN 3077
Proper shipping name : Environmentally hazardous substance, solid, n.o.s.
                        (BIS(2,4,4-TRIMETHYLPENTYL)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-TRIMETHYLPENTYL)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.
15. REGULATORY INFORMATION

National regulatory information

Further information:
1. Regulations of the Safety Administration of Dangerous Chemicals
2. Rules for classification and labeling of chemicals (30000.2~29)
3. Lists of dangerous goods (GB12268)
4. Safety Data Sheet for Chemical Products - Content and Order of Sections (GB/T16483)
5. Classification and Code of Dangerous Goods (GB6944)
6. List of hazardous waste
7. Catalogue of hazardous chemicals
8. Occupational exposure limits for hazardous agents in the workplace Part 1: Chemical hazardous agents (GBZ 2.1)

Other international regulations

16. OTHER INFORMATION

Full text of other abbreviations

ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals

Disclaimer

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.