



Material Safety Data Sheet (MSDS)

Product Name: 1420 Polyaspartic Ester Resin

Manufacturer: Jiangmen Choisum Environmental Materials Co., Ltd.

Address: Lingang Industrial Zone, Gujing Town, Xinhui District, Jiangmen City, Guangdong, China

Emergency consultation phone: 008613828049639 008613929015669

1. CHEMICAL PRODUCTS / IDENTIFICATION OF SUBSTANCE

Product Name: **1420 Polyaspartic Ester Resin**

Application: Main resin for polyurea coatings (waterproof topcoat, high weather resistance, high wear resistance, and anti-corrosion coating topcoat) formulations

GHS Hazard Category: NON-HAZARDOUS SUBSTANCE/MIXTURES

2. Composition/Information on Ingredients

Ingredient	CAS NO.	Content
Aspartic acid, N,N'-(methylene di-4,1-cyclohexanediamine di)bis-1,1',4,4'-tetraethyl ester	136210-30-5	99±1%
Diethyl fumarate	623-91-6	0-2%

3. Hazardous Analysis

GHS classification:

May cause an allergic skin reaction. 1 category (H317)

Harmful to aquatic life with long lasting effects. 3 category (H412)

Label parts:

Hazardous components must be listed on the label. Aspartic acid ester: N,N'-(Methylene di-4,1-cyclohexanediamine diyl) bis-1,1',4,4'-tetraethyl ester

Identification number: 607-521-00-8

Signal Word: Warning

Hazard statements:

H317 May cause an allergic skin reaction.

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements:

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Avoid breathing dust / fume/ gas/ mist/ vapours/ spray.

Avoid release to the environment Wear protective gloves/ eye protection/ face protection.

Call a POISON CENTER or doctor/physician if you feel unwell.

Fire and fire fighting advice In case of fire, use water spray, foam, dry chemical or carbon dioxide to extinguish.

Do not use high pressure water stream.

Store in a well-ventilated place, keep the container tightly closed.

Dispose of contents / container to an approved waste disposal facility.

4. First Aid Measures

INHALATION: Take person out of the contaminated area. Remove patient to fresh air. Call a doctor immediately

SKIN CONTACT : Wash in soap and water and rinse with water. Take off all contaminated clothing.

EYE CONTACT: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Never use solvent. If irritation continues, see an ophthalmologist.

INGESTION : Give lukewarm water to drink. Do not induce vomiting. Do not make the victim drink milk or fatty fluids. If swallowed, seek immediate advice and show container or label to the doctor.

NOTES: Call a doctor in case of doubt or if symptoms persist. If unconscious, place in recovery position and seek medical advice

5. Firefighting measures

Hazard characteristics: Flammable.

Harmful combustion products: Carbon monoxide, carbon dioxide, nitrogen oxides.

Extinguishing methods: Use extinguishing agents to put out the fire, extinguishing agents: water, alcohol-resistant foam, dry powder, carbon dioxide, sand.

6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures Wear suitable protective clothing, gloves and eye/face protection. Use self-contained breathing apparatus and chemically protective clothing.

6.2 Environmental precautions Prevent contamination of soil and water. Prevent from spreading or entering into drains, ditches or rivers by using sand, earth or other appropriate barriers.

6.3 Methods and material for containment Transfer to a labelled, sealable container for product recovery or safe disposal. Treat residues as and cleaning up for small spillage

7. Handling and Storage

7.1 Precautions for safe handling Protective measures Wear appropriate personal protective equipment.

Avoid contact with eyes, skin or clothing. Do not ingest. Keep containers closed when not in use. Advice on

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general occupational hygiene Do not eat, drink or smoke when handling this product. Wash hands after handling.

7.2 Conditions for safe storage, including Keep containers tightly closed in a dry, cool and well ventilated areas any incompatibilities. Do not store in unlabeled containers.

8. Exposure limits and personal protection

8.1 Control parameters

Occupational exposure limits No exposure limit value known

8.2 Exposure controls

Provide readily accessible eye wash stations and safety showers. Provide natural or explosion proof ventilation adequate to ensure concentrations are kept below explosion limits.

Personal protective equipment

Hand protection Chemically resistant, impervious gloves should be worn at all times when handling.

Butyl rubber, Nitrile rubber, neoprene gloves, impervious gloves, latex or vinyl disposable gloves.

Eye/face protection Protective eye glasses or goggles must be worn.

Skin and body protection Standard issue work clothes. Long sleeve shirts, trousers or overalls must be worn.

Environmental exposure controls Construct a dike to prevent spreading.

9. Physical and Chemical Properties

Appearance	Colorless to light yellow liquid
Odor	Aromatic hydrocarbon odor
Solubility	Slightly soluble in water, miscible with most organic solvents
Relative Molecular Mass	553
Equivalent (g/eq)	277 (NH equivalent)
Viscosity mpa.s/25°C:	900-1300
Solid content%	99±1
Relative density (relative to water)	1.06
Flash point	90-95°C

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10. Stability and Reactivity

Stability: The shelf life is one year. It can still be used after passing the inspection after the expiration date.

Incompatible materials: Acids, acyl chlorides, acid anhydrides, strong oxidizers, isocyanates.

11. Toxicological Information

Acute toxicity, oral:

Aspartic acid: N,N'-(methylene di-4,1-cyclohexanediamine)bis-1,1',4,4'-tetraethyl ester Median lethal dose (LD50) Rat: > 2,000 mg/kg

Method: EEC guideline 67/548/EEC, Appendix V, B1.

Acute toxicity, dermal:

Aspartic acid, N,N'-(methylene di-4,1-cyclohexanediamine)bis-1,1',4,4'-tetraethyl ester Median lethal dose (LD50) Rat: > 2,000 mg/kg

Method: EEC guideline 67/548/EEC, Appendix V, B3.

Acute toxicity, inhalation:

Aspartic acid: N,N'-(methylene di-4,1-cyclohexanediamine)bis-1,1',4,4'-tetraethyl ester Median lethal concentration (LC50) Rat: > 4,224 mg/m³, 4 h

Method: OECDTest Guideline403

Primary skin irritation:

Aspartic acid: N,N'-(methylene di-4,1-cyclohexane-diyl)bis-1,1',4,4'-tetraethyl ester

Result:Slight irritation

Method: OECDTest Guideline404

Sensitization:

Aspartic acid: N,N'-(methylene di-4,1-cyclohexane-diyl)bis-1,1',4,4'-tetraethyl ester Skin sensitization according to Magnusson/Kligmann (Maximisation Test)

Method: OECDTest Guideline 406

Respiratory sensitization

No toxicological studies are available for this product.

Subacute, chronic, and delayed toxicity:

Aspartic acid, N,N'-(methylenedi-4,1-cyclohexanediyl)bis-1,1',4,4'-tetraethyl ester

Route of application: Subacute oral toxicity

Species: Rat

Dose level (graded): 0-40-200-1,000 mg/kg NOAEL: 1,000 mg/kg

Method: OECD Test Guideline 407

Carcinogenicity:

Aspartic acid, N,N'-(methylenedi-4,1-cyclohexanediyl)bis-1,1',4,4'-tetraethyl ester

No toxicological studies are available for this product.

Reproductive toxicity/Fertility:

Aspartic acid, N,N'-(methylenedi-4,1-cyclohexanediyl)bis-1,1',4,4'-tetraethyl ester

No toxicological studies are available for this product.

Teratogenicity/Embryotoxicity:

Aspartic acid, N,N'-(methylenedi-4,1-cyclohexanediyl)bis-1,1',4,4'-tetraethyl ester

No toxicological studies are available for this product.

In vitro genotoxicity:

Aspartic acid, N,N'-(methylenedi-4,1-cyclohexanediyl)bis-1,1',4,4'-tetraethyl ester

Salmonella/microsome assay (Ames test):

Result: No evidence of mutagenicity.

Method: OECD Test Guideline 471

In vitro chromosome aberration test

Result: Negative

Method: OECD Test Guideline 473

In vivo genotoxicity:

Aspartic acid, N,N'-(methylenedi-4,1-cyclohexanediyl)bis-1,1',4,4'-tetraethyl ester

Micronucleus test:

Species: Mouse

Result: Negative

Method: OECD TG 474

Toxicological Evaluation:

Aspartic acid, N,N'-(methylenedi-4,1-cyclohexanediyl)bis-1,1',4,4'-tetraethyl ester

Acute Effects: Based on available data, classification criteria are not met.

Skin Sensitization: May cause skin allergy upon contact.

Repeated Dose Toxicity: Based on available data, classification criteria are not met.

CMR Assessment:

Aspartic acid, N,N'-(methylenedi-4,1-cyclohexanediyl)bis-1,1',4,4'-tetraethyl ester

Carcinogenicity: Based on available data, classification criteria are not met.

Mutagenicity: In vitro and in vivo tests showed no mutagenic effects. Based on this data, the substance is not classified as mutagenic.

Developmental/Teratogenic Toxicity: Based on available data, classification criteria are not met.

Reproductive Toxicity/Fertility: Based on available data, classification criteria are not met.

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STOT Assessment (Single Exposure):

Aspartic acid, N,N'-(methylenedi-4,1-cyclohexanediyl)bis-1,1',4,4'-tetraethyl ester

This substance or mixture is not classified as a specific target organ toxicant upon single exposure.

STOT Assessment (Repeated Exposure):

Aspartic acid, N,N'-(methylenedi-4,1-cyclohexanediyl)bis-1,1',4,4'-tetraethyl ester

This substance or mixture is not classified as a specific target organ toxicant upon repeated exposure.

Additional Information:

Aspartic acid, N,N'-(methylenedi-4,1-cyclohexanediyl)bis-1,1',4,4'-tetraethyl ester

Aspiration Hazard: Based on available data, classification criteria are not met.

12. Ecological Information

This material is not known as biodegradable

13. Disposal considerations

Disposal methods: Dispose of by incineration. Oxides emitted from the incinerator should be removed by a scrubber

14. Transportation information**Packaging Method:**

Sealed in plastic or iron containers.

Transportation Precautions:

For railway transport, strictly comply with the Dangerous Goods Loading Table specified in the "Regulations on the Transport of Dangerous Goods" issued by the Ministry of Railways.

Packaging must be intact and properly secured prior to shipment.

Ensure containers do not leak, collapse, fall, or become damaged during transportation.

Tanker/tank trucks used for transport must be equipped with grounding chains. Perforated baffles may be installed inside tanks to reduce static electricity buildup caused by agitation.

Mixing or joint transport with acids and food-grade chemicals is strictly prohibited.

15. Regulatory information

Occupational Disease Prevention and Control Law of the People's Republic of China (promulgated by the State Council on December 31, 2011).

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Regulations on the Safety Management of Hazardous Chemicals (promulgated by the State Council on March 2, 2011). These regulations define corresponding requirements for the safe use, production, storage, transport, and handling of hazardous chemicals.

16. Other information

Revision notes

Issue date: January 10, 2022

Revision Date: December 24, 2024

17. Further Information

For more health and safety information, please contact the Health and Safety Officer. The details provided above are based on our current understanding; however, these terms do not guarantee that the properties of each product will remain consistent and should not be treated as binding contractual terms. The terms outlined here are not exhaustive and are meant to serve as general guidance only.

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