SAFTY DATA SHEET

SECTION1 PRODUCT AND COMPANY IDENTIFICATION

Product name:	ASP110 B
Chemical name:	Polyaspartic coating hardener
Company:	Changsha Perflex Novel Materials Co.,Ltd.
Address:	Jianan Building, wanjiali Road, Changsha City.
Email:	sales@perflex.com.cn
Fax:	86-(0) 731-83307125
Emergency Phone:	86-(0)18390992093
SDS Date:	2023/10/25

SECTION2 HAZARDS IDENTIFICATION

Hazards Identification:

GHS Classification of the substance or mixture(according to REGULATION (EC)No 1272/2008):

Skin sensitization,Category1.(H317)

Serious eye damage/Eye irritation,Category 2.(H319)

Hazardous to the aquatic environment,long-term(chronic),Category 3.(H412)

Hazard statements:

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H412 Hamful to aquatic life with long lasting effects.

Precautionary statements:

P261 Avoid breathing dust /fume /gas/mist /vapours /spray.

P264 Wash…thoroughly after handling.

P272 Contaminated work dothing should not be allowed out of the workplace.

P273 Avoid release to the environment.

P280 Wear protective gloves/eye protection /face protection.

P302+P352 IF ON SKIN:Wash with plenty of water / …

P305+P351+P338 IF IN EYES:Rinse cautiously with water for several minutes.Remove contact lenses ,if present and

P333+P313 If skin irritation or rash occurs:Get medical advice /attention.

P337+P313 If eye irritation persists :Get medical advice /attention.

P362+P364 Take off contaminated clothing and washit before reuse.

P501 Dispose of contents/container to an approved waste disposal facility.

SECTION3 INFORMATION ON INGREDIENTS

Product name: Polyaspartic polyurea hardener

Hazardous components: HDI trimer

Ingredient	Concentration	CAS

HDI trimer	100	3779-63-3

SECTION4 FIRST-AID MEASURES

Skin Exposure:

Immediately remove contaminated clothing and shoes.Wash off with soap and water.Get medical attention if irritation develops and persists.

Eye Exposure:

In case of contact,immediately flush eyes with plenty of water for at least 15 minutes.Get medical attention if irritation develops.The contact lenses must be taken off by professional and trained person.

Inhalation Exposure:

Move the patient out of the contaminated area,lay the patient on his back,and immediately take the patient to the hospital or seek medical attention.If possible,remove prostheses,such as dentures,before starting first aid to prevent blockage of the airway.If breathing stops,give artificial respiration,preferably with a shut- off valve type or bag valve mask type or pocket mask type.Perform CPR if necessary.

Oral Exposure:

If victim is conscious,wash mouth out with water.Get medical aid immediately.

Notes to physician: Basic first aid,decontamination,symptomatic treatment.

SECTION5 FIRE FIGHTING MEASURES

Extinguishing Media:

Carbon dioxide (CO2),Foam,extinguishing powder,in cases of larger fires, water spray should be used.

Special hazards arising from the substance or mixture:

Burning releases carbon monoxide,carbon dioxide,oxides of nitrogen and traces of hydrogen cyanide.

Firefighting:

Firefighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes.Use cold water spray to cool fire-exposed containers to minimize risk of rupture.Toxic and irritating gases/fumes may be given off during burning or thermal decomposition.

Do every possible to avoid the toxic liquid to enter the soil,ground-water or surface waters.

SECTION6 ACCIDENTAL RELEASE MEASURES

Procedure of Personal Precaution:

Quickly evacuate personnel from the leaked contaminated area to a safe area,isolate them,and strictly restrict access.Personnel wear self-contained positive pressure breathing apparatus and anti-static overalls. Cut off the leakage source.Cover spill vapour with foam.Ensure adequate ventilation/exhaust extraction.Ventilate area to remove vapors or dust.Collection he vapors or dust to containers with EX pump, Spade up and transfer to a dry,clean,lidded container for disposal.Avoid inhalation.Ventilate area and wash spill site after material pickup is complete and disposing them in the specialized site.

Environmental precautions:

Do not allow to escape into waterways,wastewater or soil.

Methods and material for containment and cleaning up:

Take up with absorbent for chemicals or,if necessary with drysand,earth,vermiculite and diatomite,store in closed containers,and collect for proper disposal.

Measures to secondary hazards:

The spill must be stored in closed containers.

SECTION7 HANDLING AND STORAGE

Handling:

Ensure adequate ventilation and,if necessary,exhaust ventilation when handling or transferring the product. The personal protective measures described in section 8 must be observed.Avoid contact with skin and eyes absolutely.Keep away from foodstuffs,drinks and tobacco.Wash hands before breaks and at end of work
and use skin-protecting ointment.Keep working clothes separately.Change contaminated or soaked clothing immediately.

Storage:

Keep container dry and tightly closed in a cool and well ventilated place.Avoid contact with fire/heat.Material can be stored safely at ambient temperatures under 40℃.Stored in closed containers.Keep away with oxidant,acid,alkali,deoxidizer,hyperoxide.Smoking is forbidden.Take care of the opened containers to avoid leaking..

SECTION8 EXPOSURE CONTROL/PPE

Emergency restriction:

Material	TEEL-1	TEEL-2	TEEL-3	Original IDLH	Revised IDLH
Hexamethylene diisocyanate polymer	7.8 mg/m³	86 mg/m³	510 mg/m³	No data	No data

Industrial Hygiene / Ventilation Measures:

Good industrial hygiene practice dictates that worker protection should be achieved through engineering controls, such as ventilation, whenever feasible. When such controls are not feasible to achieve full protection, the use of respirators and other personal protective equipment is mandated. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination. Curing ovens must be ventilated to prevent emissions into the workplace.

Exposure controls Respiratory protection:

Respiratory protection measures are required in the work area with insufficient ventilation and when spraying products. Appropriate certified respirators, such as activated carbon and dust respirator (such as filter unit combination A2-P2) must be used. If the respiratory tract and skin are susceptible to allergy (such as asthma, chronic bronchitis and chronic skin diseases), it is recommended not to operate this product. Symptoms of respiratory tract infection may occur several hours after overexposure.

Hand Protection:

Gloves should be worn such as nitrile rubber gloves, butyl rubber gloves and neoprene gloves.

Eye Protection:

When directly handling liquid product, eye protection is required. Examples of eye protection include a chemical safety goggle or chemical safety goggle in combination with a full face shield when there is a greater risk of splash.

Skin and body protection:

Avoid all skin contact. Depending on the conditions of use, cover as much of the exposed skin area as possible with appropriate clothing to prevent skin contact, such as gloves, long sleeved shirts and pants.

Additional Protective Measures:

Emergency showers and eye wash stations should be available. Educate and train employees in the safe use and handling of this product. Follow all label instructions

SECTION9 PHYSICAL/CHEMICAL PROPERTIES

Physical appearance(20℃)	Liquid
Odor	Odorless
Odor threshold	No data available
PH	No data available
Melting point/freezing point	No data available
Boiling point/range	No data available
Flash Point	Ca.82℃
Freezing point:	No data available
Explosion Limits	No data available
Steam density	No data available
Vapour Pressure	No data available
Vapour Density	No data available
Relative density(water=1)	1.12±0.02 g/cm³at 25 ℃
Solubility	No data available
n-octanol /water partition coefficient	No data available
Auto-ignition temperature	No data available
Ignition temperature	No data available
Decomposition temperature	No data available
Viscosity,dynamic	150±50 mPa.s at 25 ℃

Section10 CHEMICAL STABILITY AND REACTIVITY INFORMATION

Stability:

Stable under normal temperatures and pressures.

Conditions to avoid:

Avoid extreme heat,static,percussion,sunshine.

Hazardous Polymerization:

Hazardous polymerization does not occur.

Materials to avoid:

oxidant,acid,alkali,deoxidizer,hyperoxide,acid chloride,isocyanate.

Possibility of hazardous reactions:

Stable under normal temperatures and pressures.
Strong oxidizing agents.

Hazardous Decomposition Products:

No risk of aggregation..

Hazardous Decomposition Products:

Nitrogen oxides,carbon oxides,amines,etc.

SECTION11 TOXICOLOGICAL INFORMATION

11.1 Acute toxicity:

Information on toxicological effects Acute toxicity,oral

※Hexamethylene diisocyanate polyme
LD50 Rat(female):>2,500 mg/kg
Method:OECD Test Guideline 423
※2,2,4-Trimethyl-1,3-Pentanediol Diisobutyrate LD50 Rat (male):>2000 mg/kg
Method:OECD Test Guideline 425

Acute toxicity,inhalation

※Hexamethylene diisocyanate polymer
LC50 Rat(male /female):0.39 mg/l aeroso Test cycle:4 h
Method:OECD Test Guideline 403

Acute toxicity,dermal

※Hexamethylene diisocyanate polymer
LD50 Rat(male /female):>2,000 mg/kg
Method:OECD Test Guideline 402
※2,2,4-Trimethyl-1,3-Pentanediol Diisobutyrate LD50 Rabbit(male/female):>2,000 mg/kg
Method:OECD Test Guideline 402

11.2 Primary skin irritation

※Hexamethylene diisocyanate polymer
Species:Rabbit
Result:Mild skin irritation
Test cycle:4 h
Method:OECD Test Guideline 404
※2,2,4-Trimethyl-1,3-Pentanediol Diisobutyrate Species:rabbit
Result:No skin irritation
Test cycle:4 h
Method:OECD Test Guideline 404

11.3 Primary mucosae irritation

※Hexamethylene diisocyanate polymer
Species:Rabbit
Result:No eye irritation
Test cycle:4 h
Method:OECD Test Guideline 405
※2,2,4-Trimethyl-1,3-Pentanediol Diisobutyrate Species:rabbit
Result:No eye irritation
Method:OECD Test Guideline 405

11.4 Sensitisation

※Hexamethylene diisocyanate polyme
Test type:maximum reaction test
Species:Guinea pig
Result:Causes allergies Method:OECD Test Guideline 406

11.5 Germ cell mutagenicity

※Hexamethylene diisocyanate polymer
Test type:Ames test
Testing system:Escherichia coli/Salmonella typhimurium
Metabolic activation:with or without metabolic activation effect
Method:OECD Test Guideline 471
Result:Negative
Test type:Mutability (mammalian cell test): Negative for chromosomal variation
Test system:Chinese hamster lung cells
Metabolic activation:with or without metabolic
activation effect
Result:Negative
Method:OECD Test Guideline 473
Test type:In vitro mammalian cell gene mutation
test
Test system:Chinese hamster ovary cells
Metabolic activation:with or without metabolic
activation effec
Result:Negative
Method:OECD Test Guideline 476
※2,2,4-Trimethyl-1,3-Pentanediol Diisobutyrate

11.6 Carcinogenicity

No data

11.7 Reproductive toxicity

Reproductive toxicity/fertility

No data

Reproductive toxicity/teratogenicity

No data

11.8 Specific target organ toxicity-single exposure

No data

11.9 Specific target organ toxicity-repeated exposure

No data

SECTION12 ECOLOGICAL INFORMATION

12.1 Toxicity Acute

Acute Fish toxicity

※2,2,4-Trimethyl-1,3-Pentanediol Diisobutyrate Type: Flow test
NOEC: 6 mg/l
Species:Lepomis macrochirus
Exposure duration: 96 h
Method: OECD Test Guideline 203

Acute toxicity for daphnia

No data

Acute toxicity for algae

※Hexamethylene diisocyanate polymer
Test type: static test
EC50 :>1000 mg/l
Species: Desmodesmus subspicatus
Test cycle: 72 h
Method: OECD Testing Guideline 201
※2,2,4-Trimethyl-1,3-Pentanediol Diisobutyrate Type: Toxic growth inhibition
EC50 : 7.49 mg/l
Species: Pseudokirchneriella subcapitata
Exposure duration: 72 h
Method: OECD Test Guideline 201
Type: Growth inhibition
EC50 :3.56 mg/l
Species: Pseudokirchneriella subcapitata
Exposure duration: 72 h
Method: OECD Test Guideline 201

Acute bacterial toxicity

No data

12.2 Persistence and degradation

Biodegradability

※Hexamethylene diisocyanate polymer
Species: aerobic
Exposure time: 28 days
Result: 1% not easily biodegradable
Method: OECD Test Guideline 301D
※2,2,4-Trimethyl-1,3-Pentanediol Diisobutyrate Species: aerobic
Exposure duration: 28 days
Result: 70.73% Rapid biodegradation
Method: OECD Test Guideline 301B

Stability in the water

No data

12.3 Bioaccumulative potential

No data

12.4 Mobility in soil

No data

Section13 DISPOSAL CONSIDERATIONS

Waste disposal method:

Products are not allowed to be discharged into sewers and water sources.

Empty Container Precautions:

Empty containers retain product residue;observe all precautions for product.Do not heat or cut empty container with electric or gas torch because highly toxic vapours and gases are formed.Do not reuse without thorough commercial deaning and reconditioning.If container is to be disposed,ensure all product residues are removed prior to disposal.

Waste Disposal Method:

Waste disposal should be in accordance with existing federal,state and local environmental control laws.

SECTION14 TRANSPORT INFORMATION

Item	Land transport (ADR/RID)	Sea transport (IMDG)	Air transport (ICAO/IATA)
UN-Number	NO	NO	NO
UN Proper shipping name	NO	NO	NO
Transport hazard Class	NO	NO	NO
Packaging group	NO	NO	NO
Environmental hazards	NO	NO	NO
Special precautions for user Transport in bulk according to Annex ll of Marpol and the IBC Code	See section 2 / Not available	See section 2 / Not available	See section 2 / Not available

SECTION15 REGULATORY INFORMATION

The following laws,regulations and standards make corresponding provisions on the safe use, storage,transportation,handling,classification and marking of chemicals.

Law of the People's Republic of China on the Prevention and Control of Occupational Diseases: Classification and Catalogue of Occupational Diseases:Not listed.

Hazardous Chemical Safety Management Regulations:

Catalogue of hazardous chemicals:Not listed.
Inventory of explosive hazardous chemicals:not listed.
List of hazardous chemicals under key supervision:not listed.
GB18218-2009 "Identification of Major Hazardous Sources of Hazardous Chemicals":Not listed.

Labor Protection Regulations for Workplaces Using Toxic Substances:

List of Highly Toxic Substances:Not listed.

Regulations on the Administration of Precursor Chemicals:

Classification and variety of precursor chemicals:not listed..

SECTION16 OTHER INFORMATION

Other Information:

The infomation 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.