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Material Safety Data Sheet

SECTION 1:CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: 3,3'-Diaminobenzidine tetrahydrochloride hydrate

Company: Suzhou YACOO Science Co., Ltd.

Address: No.128,FangZhou Road,Suzhou Industrial Park,China

Tel: 0512-87182055

Fax: 0512-87182056

SECTION 2: Hazards identification

Summary of emergency

powder off-white Harmful if swallowed., Causes serious eye irritation., Suspected of causing genetic defects., May cause cancer., Very toxic to aquatic life with long lasting effects. Show this material safety data sheet to the doctor in attendance. After inhalation: fresh air. Call in physician. In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower., Consult a physician. After eye contact: rinse out with plenty of water., Call in ophthalmologist., Remove contact lenses. After swallowing: immediately make victim drink water (two glasses at most)., Consult a physician.

Combustible. Development of hazardous combustion gases or vapours possible in the event of fire.

2.1GHS Classification

Acute toxicity, Oral (Category 4), H302

Serious eye damage/eye irritation (Category 2A), H319

Germ cell mutagenicity (Category 2), H341

Carcinogenicity (Category 1B), H350

Short-term (acute) aquatic hazard (Category 1), H400

Long-term (chronic) aquatic hazard (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2GHS Label elements, including precautionary statements

Pictogram

Signal Word Danger Hazard statement(s)

H302 Harmful if swallowed.

H319 Causes serious eye irritation.

H341 Suspected of causing genetic defects.

H350 May cause cancer.

H410 Very toxic to aquatic life with long lasting effects. Precautionary statement(s)

Prevention

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P273 Avoid release to the environment.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P313 IF exposed or concerned: Get medical advice/ attention. 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.

Restricted to professional users.

Reduced Labeling (≤ 125 ml)

Pictogram

Signal Word Danger Hazard statement(s)

H302 Harmful if swallowed.

H319 Causes serious eye irritation.

H341 Suspected of causing genetic defects.

H350 May cause cancer.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

none

2.3 Physical and chemical hazards

Referring to current information, no physical or chemical hazard.

2.4 Health hazards

H302 Harmful if swallowed.

H319 Causes serious eye irritation.

H341 Suspected of causing genetic defects.

H350 May cause cancer.

2.5 Environmental hazards

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

2.6 Other hazards - none

SECTION 3: Composition/information on ingredients

Substance / Mixture: Substance

3.1 Substances

Formula: $C_{12}H_{14}N_4 \cdot 4HCl \cdot xH_2O$

Molecular weight: 360.11 g/mol

CAS-No.: 868272-85-9

EC-No.: 231-018-9

Hazardous ingredients

Component	Classification	Concentration
Biphenyl-3,3',4,4'-tetrayltetraammonium tetrachloride	Acute toxicity Category 4; Serious eye damage/eye irritation Category 2A; Germ cell mutagenicity Category 2; Carcinogenicity Category 1B; Short-term (acute) aquatic hazard Category 1; Long-term (chronic)	<= 100 %
	aquatic hazard Category 1; H302, H319, H341, H350, H400, H410	

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures General advice

Show this material safety data sheet to the doctor in attendance.

If inhaled

After inhalation: fresh air. Call in physician.

In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower. Consult a physician.

In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

If swallowed

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

4.4 Notes to physician

No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media Suitable extinguishing media

Water Foam Carbon dioxide (CO₂) Dry powder

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Carbon oxides Nitrogen oxides (NO_x) Hydrogen chloride gas Combustible.

Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures Advice for non-emergency personnel: Avoid generation and inhalation of dusts in all circumstances. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling Advice on safe handling

Work under hood. Do not inhale substance/mixture.

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities Storage conditions

Tightly closed. Dry. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

Storage stability

Recommended storage temperature

-20 ° C

Light sensitive. hygroscopic Store with desiccant. Handle under nitrogen, protect from moisture.

Store under nitrogen.

Storage class

Storage class (TRGS 510): 6.1C: Combustible, acute toxic Cat.3 / toxic compounds or compounds which causing chronic effects

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

Personal protective equipment Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

Body Protection

protective clothing

Respiratory protection

required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Control of environmental exposure

Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Physical state powder

b) Color off-white

c) Odor No data available

d) Melting point/freezing point Melting point/range: 280 ° C

e) Initial boiling point and boiling range No data available

f) Flammability (solid, gas) No data available

g) Upper/lower flammability or explosive limits No data available

h) Flash point No data available

i) Autoignition temperature No data available

j) Decomposition temperature No data available

k) pH No data available

l) Viscosity

Viscosity, kinematic: No data available

Viscosity, dynamic: No data available

m) Water solubility soluble

n) Partition coefficient: n-octanol/water log Pow: 1.232 - Bioaccumulation is not expected.

o) Vapor pressure No data available

p) Density No data available

Relative density No data available

q) Relative vapor density No data available

r) Particle characteristics No data available

s) Explosive properties No data available

t) Oxidizing properties none

9.2 Other safety information

No data available

SECTION 10: Stability and reactivity

10.1 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

10.2 Possibility of hazardous reactions

No data available

10.3 Conditions to avoid

Exposure to light may affect product quality. Exposure to moisture may affect product quality.

no information available

10.4 Incompatible materials

Strong oxidizing agents

10.5 Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects Acute toxicity

Acute toxicity estimate Oral - 500.01 mg/kg Inhalation: No data available

Dermal: No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

Suspected of causing genetic defects. Test Type: Ames test

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation Result: positive

Remarks: The value is given in analogy to the following substances: Biphenyl-3,3',4,4'-tetrayltetraamine Test Type: unscheduled DNA synthesis assay

Test system: rat hepatocytes Result: positive

Remarks: The value is given in analogy to the following substances: Biphenyl-3,3',4,4'-tetrayltetraamine

Test Type: Cytogenetic assay Species: Mouse

Application Route: Intraperitoneal

Remarks: The value is given in analogy to the following substances: Biphenyl-3,3',4,4'-tetrayltetraamine

Carcinogenicity

Presumed to have carcinogenic potential for humans

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

11.2 Additional Information

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

The following applies to aromatic amines in general: systemic effect: methaemoglobinaemia with headache, cardiac dysrhythmia, drop in blood pressure, dyspnoea, and spasms, principal symptom: cyanosis (blue discolouration of the blood).

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

SECTION 12: Ecological information

12.1 Toxicity

No data available

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Endocrine disrupting properties

No data available

12.7 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods Product

Offer surplus and non-recyclable solutions to a licensed disposal company.

SECTION 14: Transport information

14.1 UN number

ADR/RID: -IMDG: -IATA-DGR: -

14.2 UN proper shipping name ADR/RID: Not dangerous goods IMDG: Not dangerous goods IATA-DGR: Not dangerous goods

14.3 Transport hazard class(es)

ADR/RID: -IMDG: -IATA-DGR: -

14.4 Packaging group

ADR/RID: -IMDG: -IATA-DGR: -

14.5 Environmental hazards

ADR/RID: noIMDG Marine pollutant: noIATA-DGR: no

14.6 Special precautions for user

14.7 Incompatible materials



Strong oxidizing agents

Further information

Not classified as dangerous in the meaning of transport regulations.

SECTION 15: Regulatory information

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

National regulatory information

Regulations on Safety Management of Hazardous Chemicals

Catalogue of Hazardous Chemicals: Listed

Measures on the Environmental Administration of New Chemical Substances Registration

Registration/Notification number: B1A122214038

Downstream users need to comply with the conditions of safe use of the chemical, understand the environmental and health hazard and risk management measures identified on the SDS as well as the local/national regulations concerning the chemical.

Other regulations

Please pay attention on the waste treatment should also comply with local regulations requirement.

SECTION 16: OTHER INFORMATION

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.

