




Material Safety Data Sheet

Product name RHODIACID AA – ADIPIC ACID

1. Identification of the substance/mixture and of the company/undertaking

- 1.1. Product name ADIPIC ACID
- 1.2. CAS-No. 124-04-9
- 1.3. Relevant identified uses of the substance or mixture and uses advised against
- Industrial Manufacturing (all)
 - Manufacture of textiles, leather, fur
 - Manufacture of bulk, large scale chemicals (including petroleum products)
 - Manufacture of fine chemicals
 - Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)
 - Manufacture of plastics products, including compounding and conversion
 - Consumer uses: Private households (= general public = consumers)
 - Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
 - Electricity, steam, gas water supply and sewage treatment
 - Use as intermediate or monomer
 - Preparation and use of the formulations
 - Use in the production of dish washing machine tablets
 - Use in flue gas desulphurisation
 - Laboratory activities
- Uses of the Substance/Mixture
- Uses advised against
- Food additive
 - Animal feedstuff
- 1.4. Details of the supplier of the safety data sheet
- Company Glory Global CO.,LTD
- Address C-208, 10, Nowon-ro 15-gil, Nowon-gu, Seoul, Korea
- Emergency Phone +82 2 6223 0862

2. Hazards identification

- 2.1. Classification of the substance or mixture
- GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
- Serious eye damage, Category 1
 - H318: Causes serious eye damage.
- 2.2. GHS Label elements, including precautionary statements
- Hazardous products which must be listed on the label : CAS-No. 124-04-9 Adipic acid
- Pictogram
- 
- Signal word Danger
- Hazard statement(s)
- H318 Causes serious eye damage.
- Precautionary code and statements:
- General : None
 - Prevention: P280 Wear eye protection/ face protection.
 - Response: P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON B55CENTER/doctor.
 - Storage: None
 - Disposal: None
- 2.3. Other hazards which do not result in classification : (NFPA Classification)
- | | |
|---------------------------|------------|
| Health | 2 moderate |
| Flammability | 1 slight |
| Instability or Reactivity | 0 minimal |

3. Composition/information on ingredients

3.1. Substances

Chemical Name	CAS-No.	GHS Classification	Content(%)
Adipic acid	124-04-9	Serious eye damage, Category 1; H318	≥ 99 - ≤100

4. First aid measures

4.1. Description of first aid measures

- General advice
- Show this safety data sheet to the doctor in attendance.
 - First aider needs to protect himself.
 - Place affected clothing in a sealed bag for subsequent decontamination.

If inhaled	<ul style="list-style-type: none"> - Move to fresh air. - Consult a physician if necessary.
In case of skin contact	<ul style="list-style-type: none"> - Take off contaminated clothing and shoes immediately. - Wash off with soap and water. - Consult a physician if necessary.
In case of eye contact	<ul style="list-style-type: none"> - Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. - If eye irritation persists, consult a physician
If swallowed	<ul style="list-style-type: none"> - Do NOT induce vomiting. - Rinse mouth with water. - Consult a physician if necessary.
4.2. Most important symptoms and effects, both acute and delayed	No data available
4.3. Indication of any immediate medical attention and special treatment needed	No data available
5. Firefighting measures	
5.1. Suitable extinguishing media	<ul style="list-style-type: none"> - Foam - powder - Water spray
5.2. Special hazards arising from the substance or mixture	<ul style="list-style-type: none"> - Combustible. - Fine dust dispersed in air may ignite.
5.3. Advice for firefighters	<ul style="list-style-type: none"> - Boots - Gloves - Goggles
5.4. Further information	No data available
6. Accidental release measures	
6.1. Personal precautions, protective equipment and emergency procedures	<ul style="list-style-type: none"> - Avoid contact with the skin and the eyes. - Remove all sources of ignition. - Personal protective equipment - Wear suitable gloves. - Safety glasses - Boots - Do not allow uncontrolled discharge of product into the environment.
6.2. Environmental precautions	Do not allow uncontrolled discharge of product into the environment.
6.3. Methods and materials for containment and cleaning up	<p>Recovery</p> <ul style="list-style-type: none"> - Sweep up and shovel. - Keep in properly labelled containers. - Avoid dust formation. <p>Decontamination/cleaning</p> <ul style="list-style-type: none"> - Wash off with plenty of water. - Recover the cleaning water for subsequent disposal. <p>Disposal</p> <ul style="list-style-type: none"> - Treat recovered material as described in the section "Disposal considerations".
6.4. Reference to other sections	- no data available
7. Handling and storage	
7.1. Precautions for safe handling	<ul style="list-style-type: none"> - Earth the equipment. - Inert atmosphere for pneumatic apparatus. - Use explosion-proof equipment. - This powder should not be flowed through non-conductive ducts or pipes - Use only appropriately classed electrical equipment. - Avoid dust formation. - Provide adequate ventilation. - Ensure all equipment is electrically grounded before beginning transfer operations. - Handle in accordance with good industrial hygiene and safety practice - Emergency equipment immediately accessible, with instructions for use. - Ensure that eyewash stations and safety showers are close to the workstation location. - Use clean, well-maintained personal protection equipment. - Wash hands before breaks and immediately after handling the product. - When using do not eat, drink or smoke.
Hygiene measures	<ul style="list-style-type: none"> - Save in cool, dry and well ventilated place. - Check regularly for leaks. - Do not use damaged containers. - Do not apply direct heat. - Prevent static electricity and keep away from combustible materials or heat sources. - Collected them in sealed containers.
7.2. Conditions for safe storage, including any incompatibilities	<ul style="list-style-type: none"> - Protect from moisture. - Keep in a well-ventilated place. - Keep away from open flames, hot surfaces and sources of ignition. - Keep away from incompatible materials to be indicated by the manufacturer - Keep away from: Oxidizing materials
Technical measures/Storage conditions	<ul style="list-style-type: none"> - Protect from moisture. - Keep in a well-ventilated place. - Keep away from open flames, hot surfaces and sources of ignition. - Keep away from incompatible materials to be indicated by the manufacturer - Keep away from: Oxidizing materials

Packaging material

Suitable material

- Polyethylene
- Polypropylene
- Stainless steel

Unsuitable material

- Steel
- Aluminium and its alloys.

Remarks

- Intermediate Bulk Container (IBC)
- Paper bags
- Stainless steel road-tanker.
- Stainless steel rail-tankers.

8. Exposure controls/personal protection

8.1. Control parameters

Components with workplace control parameters

- Components: Adipic Acid
- Value type: TWA
- Value: 5mg/m³
- Basis: USA. ACGIH Threshold Limit Values (TLV)

8.2. Exposure controls

Appropriate engineering controls

- Dust must be extracted directly at the point of origin

Personal protective equipment

a) Eye/face protection

- Safety goggles

b) Skin protection

- Choose body protection according to the amount and concentration of the dangerous substance at the work place.

c) Hand Protection

- Where there is a risk of contact with hands, use appropriate gloves

d) Respiratory protection

- Use a respirator with an approved filter if a risk assessment indicates this is necessary.

e) Control of environmental exposure

- Do not allow uncontrolled discharge of product into the environment.

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Form: Crystalline powder
Physical state: solid
Colour: white
Particle size: 298.6 – 331.6 µm (50 %)
very faint

Odour

no data available

Odour Threshold

pH

3.2 (1 % (m/v))

Aqueous solution

Melting point/freezing point

Melting point/range: 150.85 °C
Method: EU Test Guideline A1

Initial boiling point and boiling range

Boiling point/boiling range: 337.5 °C (1,013 hPa)
Thermal decomposition: yes

Flash point

196 °C closed cup
210 °C open cup

Evaporation rate

no data available

Flammability (solid, gas)

The product is not flammable.
Method: test Directive 92/69/EEC – Annex V Part A10

Upper/lower flammability or explosive limits

no data available

Vapour pressure

0.097 hPa (18.5 °C)
2 hPa (165 °C)

Vapour density

no data available

Solubility

Water solubility:
15 g/l (20 °C)
23 g/l (25 °C)
52 g/l (40 °C)
1,600 g/l (100 °C)
Solubility in other solvents:
Methanol : 340 g/l (30 °C)
soluble
Benzene : insoluble

Density

1.36 g/cm³ (20 °C)
Bulk density: 630 – 650 kg/m³ (20 °C) loose

Partition coefficient: n-octanol/water

log Pow: 0.093

Auto-ignition temperature

> 400 °C Relative self-ignition temperature for solids

Decomposition temperature

Method: EU Test Guideline A16
337.5 °C

Viscosity

Viscosity, dynamic : Not applicable
Viscosity, kinematic : Not applicable

Explosive properties	negative Method : EU Test Guideline A14 Mechanical sensitivity (friction) negative Method : EU Test Guideline A14 Mechanical sensitivity (shock) negative Method : EU Test Guideline A14 Thermal sensitivity
Oxidizing properties	Not considered as oxidizing, Structure–activity relationship (SAR)
Molecular weight	146.14 g/mol
9.2. Other safety information	–Dust explosion constant Maximum Pressure: 7.6 bar –Minimum ignition concentration: 30 g/m ³ –Minimum ignition energy: 30 – 100 mJ Method: modified Hartmann tube – MIKE 3 Particle size < 63µm

10. Stability and reactivity

10.1. Reactivity	– no data available
10.2. Chemical stability	– Stable at room temperature.
10.3. Possibility of hazardous reactions	– no data available
10.4. Conditions to avoid	– Dust – Heat, flames and sparks.
10.5. Incompatible materials	– Strong oxidizing agents – Strong acids – Reacts with the following substances:
	– Bases
10.6. Hazardous decomposition products	– no data available

11. Toxicological information

11.1. Information on toxicological effects

Acute toxicity	Adipic acid LD50 : 5,560 mg/kg – Rat , male and female Method: OECD Test Guideline 401 Unpublished reports
Skin corrosion/irritation	Rabbit Mild skin irritation Method: OECD Test Guideline 404 Unpublished reports
Serious eye damage/eye irritation	Rabbit Risk of serious damage to eyes. Method: OECD Test Guideline 405 Unpublished reports
Respiratory or skin sensitisation	Maximisation Test – Guinea pig Responding animals in GPMT < 30% Unpublished reports
Germ cell mutagenicity	No data available
Carcinogenicity	Rat Oral studies did not reveal any carcinogenic potential Published data
Reproductive toxicity	No toxicity to reproduction, Published data, internal evaluation
Specific target organ toxicity – single exposure	The substance or mixture is not classified as specific target organ toxicant, single exposure according to GHS criteria.
Specific target organ toxicity – repeated exposure	The substance or mixture is not classified as specific target organ toxicant, repeated exposure according to GHS criteria.
Aspiration hazard	no data available

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

12. Ecological information

12.1. Toxicity	LC50 – 96 h : > 1,000 mg/l – Danio rerio (zebra fish) static test Analytical monitoring: yes Method: according to a standardised method Not harmful to fish (LC/LL50 > 100 mg/L) Unpublished reports
12.2. Persistence and degradability	No data available
Stability in water	No data available
Photodegradation	Sensitizer: OH Concentration sensitizer in molecule/cm ³ : 500.000 1/cm ³ Rate constant in cm ³ /molecule*s: 5.5893E–12 cm ³ /s Half–life indirect photolysis: 2.9 Days Method: Structure–activity relationship (SAR)

12.3. Bioaccumulative potential	<p>Inherent biodegradability study Method: Zahn–Wellens Test > 90 % – 5 Days The substance fulfills the criteria for inherent ultimate biodegradability Dissolved organic carbon (DOC) Inoculum: Sewage effluent Published data</p>
12.4. Mobility in soil	<p>Soil Method: according to a standardised method 84 % – 30 Days CO2 evolution test Published data</p>
12.5. Other adverse effects	<p>No data available</p>
13. Disposal considerations	
13.1 Disposal methods	<p>Since more than two kinds of designaed waste is mixed, it is difficult to treat seperatly, then can be reduction or stabilization by incineration or similar process. If water separation is possible, pre–process with Water separation process. Dispose by incineration.</p>
13.2. Special precautions for disposal	<p>The user of this product must disposal by oneself or entrust to waste disposer or person who other’s waste recycle and dispose, person who establish and operate waste disposal facilities. Dispose of waste in accordance with all applicable laws and regulations.</p>
14. Transport information	
14.1. KR_DG	<p>not regulated</p>
14.2. ADR	<p>not regulated</p>
14.3. RID	<p>not regulated</p>
14.4. IMDG	<p>not regulated</p>
14.5. IATA	<p>not regulated</p>
14.6. Special precautions for user related to transport or transportation measures	<p>The above regulatory prescriptions are those valid on the date of publication of this sheet. Given the possible evolution of transport regulations for hazardous materials, it would be advisable to check their validity with your sales office.</p>
15. Regulatory information	
15.1. Occupational Safety and Health Act	<p>Harmful Substances Prohibited from Manufacturing Not applicable Harmful Substances Required Permission for Manufacture Not applicable Controlled Hazardous Substances Not applicable Controlled Substances Subject to Environment Monitoring Not applicable Controlled Substances Subject to Health Examination Not applicable</p>
15.2. AREC (K–REACH) and Chemicals Control Act	<p>Not applicable</p>
15.3. Safety Control of Dangerous Substances Act	<p>Not Applicable to Dangerous Materials</p>
15.4. Wastes Control Act	<p>Industrial waste Follow article 13 of the act to dispose the product waste</p>
15.6. Notification status	<p>United States TSCA Inventory Listed on Inventory Canadian Domestic Substances List (DSL) Listed on Inventory Australia Inventory of Chemical Substances (AICS) Listed on Inventory Japan. CSCL – Inventory of Existing and New Chemical Substances Listed on Inventory Korea. Korean Existing Chemicals Inventory (KECI) Listed on Inventory China. Inventory of Existing Chemical Substances in China (IECSC) Listed on Inventory Philippines Inventory of Chemicals and Chemical Substances (PICCS) Listed on Inventory</p>
16. Other information	
16.1. Further information	<p>Always work safely around open hatches on bulk tanks. The low density makes flotation difficult for immersed person.</p>

