

**ADI-PURE® High Purity Adipic Acid**

Version 2.2

Revision Date 07.03.2005

Ref. 13000000471

This SDS adheres to the standards and regulatory requirements of the European Community and may not meet the regulatory requirements of other countries.

**1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING****Product information**

Product name : ADI-PURE® High Purity Adipic Acid

Use of the  
Substance/Preparation : chemical intermediateCompany : INVISTA Textiles (U.K.) Ltd  
Wilton Site  
Redcar  
TS10 4XY

Telephone : +441642445400

Telefax : +441642445540

Emergency telephone  
number : +44-(0)208-762.8322**2. COMPOSITION/INFORMATION ON INGREDIENTS****Hazardous components**

Chemical Name	CAS-No.	EC-No.	Classification	Concentration [%]
Adipic acid	124-04-9	204-673-3	Xi; R36	99,9

For the full text of the R phrases mentioned in this Section, see Section 16.

**3. HAZARDS IDENTIFICATION**

Irritating to eyes.  
Dust may form explosive mixture in air.

**4. FIRST AID MEASURES**

General advice : Never give anything by mouth to an unconscious person. Take off all contaminated clothing immediately.

Inhalation : Move to fresh air.

Skin contact : Wash off immediately with soap and plenty of water.

Eye contact : Rinse thoroughly with plenty of water, also under the eyelids. Consult a physician.

Ingestion : Clean mouth with water and drink afterwards plenty of water. Consult a physician if necessary.

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**5. FIRE-FIGHTING MEASURES**

- Suitable extinguishing media : water, dry powder, foam, carbon dioxide (CO<sub>2</sub>),
- Specific hazards during fire fighting : Dust may form explosive mixture in air. In the event of fire the following can be released: Carbon monoxide carbon dioxide (CO<sub>2</sub>) Do not allow run-off from fire fighting to enter drains or water courses.
- Special protective equipment for fire-fighters : Wear self-contained breathing apparatus and protective suit.
- Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

**6. ACCIDENTAL RELEASE MEASURES**

- Personal precautions : Remove all sources of ignition. Ventilate the area. Avoid dust formation. Use personal protective equipment.
- Methods for cleaning up : Avoid dust formation. Shovel or sweep up. Keep in suitable, closed containers for disposal.
- Additional advice : Dispose of in accordance with local regulations.

**7. HANDLING AND STORAGE****Handling**

- Advice on safe handling : Provide appropriate exhaust ventilation at places where dust is formed. Avoid contact with skin, eyes and clothing. Do not breathe dust. Wear personal protective equipment.
- Advice on protection against fire and explosion : Dust may form explosive mixture in air. Keep away from heat and sources of ignition. Take precautionary measures against static discharges.

**Storage**

- Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place.
- Advice on common storage : Keep away from food, drink and animal feeding stuffs.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION****Engineering measures**

- Provide appropriate exhaust ventilation at places where dust is formed.



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### Personal protective equipment

- Respiratory protection : No personal respiratory protective equipment normally required. Respirator must be worn if exposed to dust. Suitable mask with particle filter P3 (BS EN 143).
- Hand protection : Material: butyl-rubber  
Permeation rate: 480 min  
Glove thickness: 0,5 mm
- Hand protection : Material: nitrile rubber  
Permeation rate: 480 min  
Glove thickness: 0,11 mm  
Unsuitable material:, Do not wear cotton or leather gloves.
- Eye protection : tightly fitting safety goggles
- Skin and body protection : long sleeved clothing
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Wash hands before breaks and at the end of workday.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

- Form : powder,
- Colour : white,
- Odour : none,
- pH : 3,2 at 1 g/l ( 25 °C)
- Melting point/range : 152 °C
- Boiling point/range : 336 °C
- Flash point : 196 °C , Method: Tag closed cup
- Ignition temperature : 420 °C
- Vapour pressure : 0,011 kPa at 25 °C
- Density : 1,34 g/cm<sup>3</sup> at 20 °C
- Bulk density : 600 - 700 kg/m<sup>3</sup>
- Water solubility : 19 g/l at 20 °C
- Partition coefficient (n-octanol/water) : log Pow: 0,08 at: 25 °C
- Solubility in other solvents : 44 g/l, at, 20 °C Medium: Acetone,

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Solubility in other solvents : 216 g/l, at, 20 °C Medium: Methanol,  
Relative vapour density : 5,04

**10. STABILITY AND REACTIVITY**

Conditions to avoid : Temperature : > 230 °C Decomposes on heating.  
Materials to avoid : strong bases, reducing agents, oxidizing agents  
Hazardous decomposition products : carbon dioxide (CO<sub>2</sub>)

**11. TOXICOLOGICAL INFORMATION**

Acute oral toxicity  
• Adipic acid : LD<sub>50</sub>/rat : 3 600 mg/kg

Acute inhalation toxicity  
• Adipic acid : LC<sub>50</sub>/4 h/rat : > 7,7 mg/l

Skin irritation : rabbit  
Result: Mild skin irritation

Eye irritation : rabbit  
Result: Eye irritation

Sensitization : guinea pig Result: Animal test did not cause sensitization by skin contact.

Repeated dose toxicity  
• Adipic acid : Oral rat, Exposure time: 35 d, NOEL: ca. 1 600 mg/kg

Mutagenicity assessment : Animal testing did not show any mutagenic effects.

Carcinogenicity assessment : Animal testing did not show any carcinogenic effects.

Assessment of toxicity to reproduction : Animal testing did not show any effects on fertility.  
Animal testing did not show any effects on foetal development.

Human experience : Excessive exposures may affect human health, as follows:  
Inhalation  
*Mucous membranes*: irritation  
Skin contact

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Mild skin irritation  
Ingestion  
*Mucous membranes*: irritation

**12. ECOLOGICAL INFORMATION****Elimination information (persistence and degradability)**

Biodegradability : aerobic//28 d/Readily biodegradable. 100 %  
Method: (Modified Sturm Test)

**Ecotoxicity effects**

Toxicity to fish  
• Adipic acid : LC50/96 h/Fathead minnow: 88 mg/l

LC50/96 h/Golden orfe: 230 mg/l  
Method: DIN 38412

Toxicity to algae  
• Adipic acid : EC50/72 h/scenedesmus subspicatus: 31,3 mg/l

Aquatic toxicity  
• Adipic acid : EC50/48 h/Daphnia: 85,7 mg/l

Toxicity to bacteria : Growth inhibition EC50  
Species: *Pseudomonas putida*  
Dose: 91,9 mg/l  
Exposure time: 17 h  
Method:

**13. DISPOSAL CONSIDERATIONS**

Product : Dispose of as special waste in compliance with local and national regulations  
Offer surplus and non-recyclable solutions to a licensed disposal company. Can  
be incinerated, when in compliance with local regulations.

Contaminated packaging : Empty containers should be taken for local recycling or waste disposal.

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**14. TRANSPORT INFORMATION**

Further Information : Not dangerous goods in the meaning of ADR/RID, ADNR, IMDG-Code, ICAO/IATA-DGR

**15. REGULATORY INFORMATION****Labelling according to EEC Directive**

Symbol(s) : Xi Irritant

Hazardous components: Adipic acid

R-phrases) : R36 Irritating to eyes.

**16. OTHER INFORMATION****Text of R phrases mentioned in Section 2**

R36 Irritating to eyes.

**Further information**

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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.