MATERIAL SAFETY DATA SHEET

ADENINE HEMI SULPHATE DIHYDRATE

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Chemical product name	:	Adenine Hemi Sulphate Dihydrate
Common chemical name	:	Adenine hemisulphate
Synonyms	:	6-Aminopurine sulfate dihydrate,
Chemical formula	:	$(C_5H_5N_5)_2.H_2SO_4.\ 2\ H_2O = 404.3$
CAS no.	:	321-30-2
EINEC	:	206-286-5
Supplier's name	:	Duchefa Biochemie B.V.
Supplier's address	:	A. Hofmanweg 71 2031 BH Haarlem The Netherlands
Emergency telephone	:	(+31) - (0)23 - 5319093

2. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/preparation:

Chemical name	**CAS no.**	**% (w/w)**	**Symbol**	**R phrases**
Adenine Hemisulphate	321-30-2	> 99.0	X_n	22

3. HAZARDS IDENTIFICATION

Physical/chemical hazards	:	
Environmental hazards	:	None
Effect(s) of (over)exposure		
Symptom(s) of (over)exposure		
Inhalation	:	May cause respiratory tract irritation. May be harmful if swallowed.
Ingestion	:	May cause irritation of the digestive tract. May be harmful if swallowed.
Skin contact	:	May cause irritation. May be harmful if absorbed through the skin.
Eye contact	:	May cause irritation
Aggravating conditions	:	--

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4. FIRST AID MEASURES

Fresh air. If you feel unwell seek medical advice and show the MSDS if possible

SKIN CONTACT	:	Take off contaminated clothes. Wash skin with soap and copious amounts of water.
EYE CONTACT	:	Rinse eyes with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.
INGESTION, INHALATION	:	If swallowed, give 2-4 cupfuls of milk or water, provided person is conscious. If breathing is difficult, give oxygen. Consult a doctor

5. FIRE FIGHTING MEASURES

Extinguishing media

Suitable	:	Fight fire with water, CO_2 or powder.
Hazardous thermal decomposition and combustion products	:	Could cause fire in high temperatures. When heated to decomposition material emit toxic fumes (NOx and COx).
Special fire fighting procedures	:	Prevent build-up of static electricity.
Protection of fire-fighters	:	Fire-fighters must wear self containded breathing equipments and impervious clothing.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	:	Use with local exhaust to control dust. Avoid contact with skin and eyes. Do not swallow. Do not breathe dust.
Environmental precautions	:	--
Methods for cleaning up	:	Remove spilled material with water. Place into appropriate container for disposal. Avoid dust. Ventilate and wash spill area. Wear suitable protective clothing. Use rubber gloves and eye/face protection.

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7. HANDLING AND STORAGE

Handling	:	Use with adequate ventilation Keep containers closed.
Storage	:	Store at 2 – 8 °C.
Packaging materials	:	Glass or plastic containers

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering measures	:	--
Hygienic measures	:	Do not eat, drink and/or smoke during work. Wash after handling
Personal protection		
Respiratory system	:	Do not inhale
Skin and body	:	Use protective clothing
Hands	:	Use rubber gloves
Eyes	:	Use eye/face protection
Occupational exposure limits		
TLV (USA)	:	--
"MAK" (Germany)	:	--
MAC (Netherlands)	:	--

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Crystalline powder
Colour	:	Yellowish to white
Odour	:	Odourless
Melting point	:	285 °C
Boiling point	:	--
Density	:	--
Solubility	:	Slightly soluble in water (0.4 g/100 ml water)
Flash point	:	--
Lower explosion limit	:	--
Upper explosion limit	:	--

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10. STABILITY AND REACTIVITY

Stability	:	Stable at low temperature (2-8 °C).
Conditions to avoid	:	--
Materials to avoid	:	Strong oxidizing agents.
Hazardous decomposition products	:	When heated to decomposition material emit toxic fumes (NO_x, SO_x and CO_x,).
Hazardous polymerisation	:	None

11. TOXICOLOGICAL INFORMATION

Acute toxicity		The toxicologically effects of this product are not determined.
Intravenous	:	--
Subcutaneous	:	--
Inhalation	:	May be harmful if inhaled.
Eye irritation	:	May cause eye irritation.
Skin irritation	:	May cause skin irritation. May be harmful if absorbed through the skin.
Sensitization	:	--
Chronic toxicity	:	Not determined
Carcinogenicity	:	None
Mutagenicity	:	None

12. ECOLOGICAL INFORMATION

Mobility	:	Not determined
Persistence and degradability	:	Not determined
Bio-accumulative potential	:	Not determined
Ecotoxicity	:	Not determined

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13. DISPOSAL CONSIDERATIONS

Product:
There are no uniform EC Regulations for the disposal of chemicals or residues. Chemical residues generally count as special waste. The disposal of the latter is regulated in the EC member countries through corresponding laws and regulations. We recommend that you contact either the authorities in charge of approved waste disposal companies which will advise you on how to dispose of special waste.

Packaging:
Disposal in compliance with official regulations. Handle contaminated packaging in the same way as the substance itself. If not officially specified differently, non-contaminated packaging may be treated like household waste or recycled.

14. TRANSPORT INFORMATION

UN Number	:	--
Maximum filing grade tank	:	--
Proper shipping name	:	--
Road/Railway/Inland waterways		
ADR/RID/ADNR Class	:	Non-hazardous for road transport
Hazard identification number	:	--
Sea		
IMDG Class	:	Non-hazardous for sea transport
Packaging group	:	--
Air		
IATA Class	:	Non-hazardous for air transport
Packaging group	:	--
Packing instructions (PA)	:	--
Packing instructions (CAO)	:	--

15. REGULATORY INFORMATION

Responsibility of the receiver to have knowledge of national and local regulations.

EC Classification

Label name	:	Harmful

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Hazard symbol	:	X_n

Risk phrases	:	22: Harmful if swallowed
Safety phrases	:	22: Do not breathe dust
		24/25: Avoid contact with skin and eyes
National regulations		
WGK (Germany)	:	--
Listed on TSCA-inventory	:	--
Listed on DSL-inventory	:	--
Listed on AICS-inventory	:	--
Listed on MITI-inventory	:	--

16. OTHER INFORMATION

All information given by or on behalf of Duchefa as to properties, specifications, use, etc. of the products is based on research, including literature and is believed reliable.
Duchefa is not liable for any damage a Customer might suffer as a result of the fact that the products the Customer bought from Duchefa prove not to be suitable for the use to which the Customer wishes to apply the products, unless the Customer has been expressly advised by Duchefa in writing in this regard.
Duchefa is not liable for damage caused by the actions or omissions of Customers themselves or by persons appointed by Customers or for whom Customers are otherwise responsible.

In this respect the buyer is obliged to check the quality and all other properties of the products. The buyer assumes all responsibilities connected with the use of the products and information.

Duchefa does not guarantee the manner of packaging, and/or the quality and/or the properties of the packaging of the goods unless Duchefa itself applied the packaging and/or had it applied and/or packed the goods itself and/or had them packed.

Communications by or on behalf of Duchefa on the quality, the composition, the handling (in the broadest sense of the word), application possibilities, properties and the like of the products supplied by Duchefa do not bind Duchefa unless these communications are made expressly, in the form of a written guarantee.

Furthermore the general terms and conditions of sale are applicable and upon request we will send the complete general terms and conditions of sale.

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HISTORY

Printing date	**:**	**January 17th, 2005**
Date previous MSDS	**:**	February 05th, 2001