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# MATERIAL SAFETY DATA SHEET

## SECTION 1. IDENTIFICATION OF SUBSTANCE/PREPARATION AND OF THE COMPANY

<b>Identification of the Substance</b>	MIKROFINE ADC-H2/H5/H49/L2/L5/L49/F1/F2/F3/F5/F49/H600/L/FC1; MIKROFINE 6A07/2A03/5A06/2A3M/3A4M; MIKROFINE ADC-4055/4075/4015/3052/3072/3012/3042/4045/LFGD/3042M/3032/3202/32/47/3072 M/3052 M/3042 M/4A5M
<b>Use of the Substance</b>	As a chemical blowing agent for foaming plastics and rubber
<b>Company Identification</b>	<b>HIGH POLYMER LABS LIMITED</b> 803, Vishal Bhawan, 95, Nehru Place, New Delhi-110 019, INDIA Tel. (+91 11) 26431522/1379, 26421570/1 Fax (+91 11) 26474350/26460981
<b>Emergency Telephone</b>	(+91 11) 36073650 (+91) 9811693307

## SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

CAS	Chemical Name	%	EINECS
123-77-3	Azodicarbonamide/Diazenedicarboxamide/Azobisformamide	>98	204-650-8

**Classification** Hazard symbol (x) Class 4.1 Packaging group II  
**Risk Phrases** R-5, R-10, R-42/43 and R-68

## SECTION 3. HAZARDS IDENTIFICATION

### 3.1 Human Health Hazards

**Eye** Dust may cause mechanical irritation  
**Skin** May cause skin irritation  
**Ingestion** May cause irritation of the digestive tract  
**Inhalation** May cause respiratory tract irritation  
**Chronic** Repeated or prolonged contact with skin may cause dermatitis.  
 Repeated or prolonged contact may cause skin sensitisation.  
 Repeated or prolonged inhalation exposure may cause asthma.

### 3.1 Other Hazards

Dust explosion hazard  
 Explosion hazard if product is heated under confinement

**SECTION 4.****FIRST AID MEASURES**

<b>Eye</b>	In case of eye contact, wash thoroughly with water. Seek medical advice.
<b>Skin</b>	In case of skin contact, wash thoroughly with water. Seek medical advice.
<b>Ingestion</b>	If product is swallowed, transfer patient to hospital and seek medical advice.
<b>Inhalation</b>	Take patient into a well-ventilated area. Check for any allergy (asthmatic type) and seek medical advice if necessary.

**SECTION 5.****FIRE FIGHTING MEASURES**

<b>Extinguishing Media</b>	Water, CO <sub>2</sub> and foam For small fires, use dry chemical, carbon dioxide, water spray or regular foam. Cool containers with flooding quantities of water until well after fire is out. For large fires, flood fire area with water from a distance. Spraying material with plenty of water will result in reduction of heat generated by exothermic decomposition of the product.
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Do not breathe fumes and gases generated during decomposition or fire. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Self contained breathing apparatus must be worn during fire fighting.

**SECTION 6.****ACCIDENTAL RELEASE MEASURES**

Use proper personal protective equipment  
Product should not be allowed to enter into local drainage or sewer systems.  
Any spillage should be removed, preferably by vacuum and stored in labeled containers.  
Avoid generating dusty conditions.  
Remove all source of ignition. Provide ventilation.

**SECTION 7.****HANDLING AND STORAGE**

<b>7.1 Handling</b>	Wear protective clothing including breathing protection apparatus and safety goggles, or eye protection. Wash hands and face thoroughly after handling. Avoid ingestion and inhalation
<b>7.2 Storage</b>	Keep product pack closed & dry and in original container Store in a cool, dry, well-ventilated area away from incompatible substances. Keep container tightly closed when not in use. Keep away from direct sunlight and any source of ignition.

**SECTION 8.****EXPOSURE CONTROLS/PERSONAL PROTECTION****8.1 Exposure Limits**

There is no indicative limit value specified by the commission of European Communities. No MAK or TRK specified by DFG & no TLV specified by ACGIH.

Maximum exposure limit 1.0 mg/m<sup>3</sup> (8.0 hrs. time-weighted average reference) and short-term exposure limit 3.0 mg/m<sup>3</sup> (15 minutes reference period) are established in U.K.

ACGIH	None listed
NIOSH	None listed
OSHA-Final PELs	None listed
OSHA-Vacated PELs	None listed

**8.2 Exposure Controls**

Use adequate ventilation to keep airborne concentrations low.

If vent inadequate use NIOSH/MSHA/European Standard EN 149 approved respirator.

Wear appropriate protective eyeglasses or chemical safety goggles.

Wear appropriate protective gloves and protective clothing to prevent skin exposure

If user develops sensitivity to respiratory tract whilst using product, the user should not be exposed to the product any longer. Allergy to the product normally takes the form of an asthmatic type of attack e.g., wheezing, tightness of breath. Seek medical advice.

**SECTION 9.****PHYSICAL AND TECHNICAL DATA****9.1 General Information**

<b>Appearance</b>	Fine yellow powder
<b>Odour</b>	Odourless

**9.2 Important Health, Safety and Environmental Information**

<b>pH</b>	Not available
<b>Melting point</b>	186-203°C
<b>Flash point</b>	225°C (437.0°F)
<b>Flammability</b>	Flammable
<b>Explosion properties</b>	Explosion hazard if heated under confinement
<b>Vapour pressure</b>	Not available
<b>Density</b>	1.66 gm/cc
<b>Solubility</b>	Insoluble in water, partially soluble in DMF and DMSO
<b>Viscosity</b>	Not available
<b>Vapour Density</b>	Not available
<b>Evaporation rate</b>	Not available
<b>Auto-ignition temperature</b>	Not available
<b>Gas released at normal operating temperature</b>	Mainly Nitrogen, Carbon di-oxide, Carbon mono-oxide, and Ammonia

**SECTION 10.****STABILITY AND REACTIVITY****10.1 Conditions to avoid**

Excess heat and dust generation

## 10.2 Materials to avoid

Strong oxidising agents, incompatible materials and strong oxidants. The decomposition temperature of the product can change dramatically in the presence of alkalis, transition metal salts (e.g. of Zn), amines and oxidising agents and formulated activators.

## 10.3 Hazardous decomposition products

Although azodicarbonamide decomposes quickly above 190°C, it may decompose slowly above 100°C, composition of gaseous products and solid residues will vary with temperature and is time/pressure dependent. In a fire situation, the product will release dense fumes. Risk of explosion if heated under confinement.

## SECTION 11. TOXICOLOGICAL INFORMATION

May be mildly irritating to eyes and skin. It has got a low toxicity. Inhalation of dust can cause lung sensitisation. Azodicarbonamide is a substance of low toxicity.

<b>Oral toxicity</b>	LD 50 (rats) >6800mg/kg
<b>Dermal toxicity</b>	LD 50 (rabbits) >2000mg/kg
<b>Inhalation toxicity</b>	LC 50 (rats) >200 mg/L(hr)
<b>Genotoxicity</b>	<i>Ames</i> Salmonella ..... Positive CHO-HGPRT ..... Negative Rat hepatocyte UDS.... Negative Mouse Micronucleus... Negative
<b>Carcinogenicity</b>	Not listed by ACGIH, IARC, NIOSH, NTP or OSHA
<b>Epidemiology</b>	No information available
<b>Teratogenicity</b>	No information available
<b>Reproductive effects</b>	No information available
<b>Neurotoxicity</b>	No information available
<b>Mutagenicity</b>	Identified as a mutagen in bacterial system, but it was not mutagenic in mammalian cell <i>in vitro</i> test systems or in two mammalian assays <i>in vivo</i> using bone marrow.

## SECTION 12. ECOLOGICAL INFORMATION

Slightly hazardous to water. Azodicarbonamide is considered to be slightly toxic to non-toxic to aquatic species and is readily biodegradable...biodegradability (30 days).....around 70 %

Fathead minnow 48 hr LC 50 ...>50mg/L

(*Pimephales promelas*)

Water flea 48 hr EC50.....11 mg/L

(*Daphnia magna*) immobilization

## SECTION 13. DISPOSAL CONSIDERATION

Small quantities can be incinerated in a suitable incinerator, large quantities need special treatment. Supplier should be requested to supply information.

<b>SECTION 14.</b>	<b>TRANSPORTATION INFORMATION</b>
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<b>UN NUMBER</b>	3242, IMDG Code page 4122 - 1 Amdt. 27-94
<b>IMO</b>	(SEA)
<b>ADR</b>	(ROAD)
<b>Proper Shipping Name</b>	AZODICARBONAMIDE

<b>SECTION 15.</b>	<b>REGULATORY INFORMATION</b>
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<b>INVENTORY STATUS</b>
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This product is listed in the following chemical inventories

TSCA	EINECS	AICS
DSL	ENCS	ECL
SWISS	PICCS	ASIA-PAC

<b>US Federal</b>
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<b>TSCA</b>	CAS# 123-77-3 is listed on the TSCA inventory.
<b>Health &amp; Safety Reporting List</b>	None of the chemicals are on the Health & Safety Reporting List.
<b>Chemical Test Rules</b>	None of the chemicals in this product are under a Chemical Test Rule.
<b>Section 12 b</b>	None of the chemicals are listed under TSCA Section 12b.
<b>TSCA Significant New Use Rule</b>	None of the chemicals in this material have a SNUR under TSCA.
<b>SARA</b>	
<b>CERCLA Hazardous Substances and Corresponding RQs</b>	None of the chemicals in this material have an RQ.
<b>SARA Section 302 Extremely Hazardous Substances</b>	
<b>Section 313</b>	No chemicals are reportable under Section 313.
<b>Clean Air Act</b>	This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depleters. This material does not contain any Class 2 Ozone depleters
<b>Clean Water</b>	None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.
<b>OSHA</b>	None of the chemicals in this product are considered highly hazardous by OSHA.
<b>State</b>	Azodicarbonamide is not present on state lists from CA, PA, MN, MA, FL, or NJ.
<b>California No Significant Risk Level</b>	None of the chemicals in this product are listed.

**European/International Regulations**

European Labeling in Accordance with EC Directives

**Risk Phrases**

- R-5 Heating may cause an explosion  
R-10 Flammable  
R-42/43 May cause sensitisation by inhalation and skin contact  
R-68 Possible risk of irreversible effects

**Safety Phrases**

- S-15 Keep away from heat  
S-16 Keep away from sources of ignition. No smoking  
S-22 Do not breathe dust  
S-26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice  
S-27 Take off immediately all contaminated clothing  
S-36/37/39 Wear suitable protective clothing and eye/face protection  
S-41 In case of fire and/or explosion do not breathe fumes

**WHMIS**

Azodicarbonamide does not have a WHMIS classification.

**SECTION 16.****OTHER INFORMATION**

Lung sensitisation: Some people can develop allergy when they work with powdered azodicarbonamide. Allergy symptoms can manifest as asthmatic attacks which can be seen in the form of wheezing, shortness of breath and tightness of chest. The attack may manifest a few hours after working with the powder and may last 1-2 hours. Recovery is complete within 24 hours. If lung sensitisation occurs, the affected person should be removed from further exposure to azodicarbonamide.

The information given in this document is only a recommendation believed to be reliable and is given in good faith but without warranty. Our advice does not release users from the obligation of checking its validity and to test our products as to their suitability for the intended use. Specified properties mentioned in this document are based on our historical production performance and these properties or the whole document is subject to change without any prior notice at our sole discretion. We are under no obligation to call back earlier issued documents.