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| **Version** | **: 1** |
| **Date** | **: May 17, 2018** |

# SAFETY DATA SHEET

In Accordance with OSHA 29 CFR 1910.1200 HCS

# MIKROFINE® ADC

## 1) IDENTIFICATION

### 1.1 Product Identifier

| | |
|---|---|
| Trade name | MIKROFINE® ADC-H2/H5/L/L2/L5/F1/F2/F3/F5/ /Z25 /Z35 /Z40; MIKROFINE® 6A07/2A03/5A06/2A3M/3A4M/AX9M; MIKROFINE® ADC-4055/4075/4015/3052/3052M/3072/ 3072M/ 3012/3042/ 3042M/4045/LFGD/HFGD/ 3042M/3202/ /3202M /32/47/4A5M/ADC FN-3 |
| Substance Name: | C,C'-azodi(formamide) |
| CAS number: | 123-77-3 |

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

| | |
|---|---|
| Identified uses | Chemical blowing agent |

### 1.3 Detail of the supplier of the safety data sheet

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|---|---|
| Manufacturer/Supplier | HPL ADDITIVES LIMITED<br>5th Floor, Block A, Vatika Mindscapes,<br>12/3, Main Mathura Road,<br>Faridabad – 121003, Haryana, India. |
| Telephone | +91- 129- 2251300 |
| Fax | +91- 129- 2251304/05 |
| e-mail | hpla@hpladditives.com |
| Prepared by | Product Compliance and Regulatory Affairs Department. |

### 1.4 Emergency telephone number

| | |
|---|---|
| Emergency phone # | +91-9910486232 |

# 2) HAZARD(S) IDENTIFICATION

## 2.1 Classification of the substance or mixture

**Classification according to Globally Harmonized System(GHS)**

Respiratory sensitization (Category 1); H334

## 2.2 Label element

**Labelling According to GHS**

Pictogram :

**Signal word** Danger

**HAZARD STATEMENT(S)**

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

**PRECAUTIONARY STATEMENT(S)**

**Prevention**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No Smoking
P234 Keep only in original container
P261 Avoid breathing dust/fume
P285 In case of inadequate ventilation wear respiratory protection

**Response**

P304 +P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
P342 +P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician
P370 +P378 In case of fire: Use $CO_2$, powder or water spray for extinction

**Storage**

P411 Store at temperatures not exceeding 50°C
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

**Disposal**

P501 Dispose of contents/container in accordance with local/regional/national/international regulations

**Other hazards** None

## 3) COMPOSITION/INFORMATION OF INGREDIENTS

| Chemical Characterization | CAS number | Identification content (or range) | Weight % | EC Number |
|---|---|---|---|---|
| Substance | 123-77-3 | C,C'-azodi(formamide) | > 99 | 204-650-8 |

## 4) FIRST AID MEASURES

### 4.1 Description of first aid measures

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|---|---|
| Eye | Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor |
| Skin | Generally the product does not irritate the skin, but in any case, wash thoroughly with water and soap. |
| Ingestion | Do not induce vomiting. Rinse mouth and then drink water. Obtain medical attention. |
| Inhalation | Take patient into a well-ventilated area or supply fresh air, consult doctor in case of complaints. |

### 4.2 Most important symptoms and effects, both acute and delayed

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

### 4.3 Indication of any immediate medical attention and special treatment needed

No information available

## 5) FIRE FIGHTING MEASURES

### 5.1 Extinguishing Media

**Suitable extinguishing media**

$CO_2$, powder or water spray. Fight larger fires with water spray or alcohol resistant foam

**Unsuitable Extinguishing Media**

Water with full jet (for safety reasons)

### 5.2 Special hazards arising from the substance or mixture

In the event of a fire, toxic and combustible gases can be formed. If a fire breaks out nearby, pressure build up and danger of bursting are possible. In the case of exothermal disintegration ('characteristic' heavy white smoke development) and a nearby fire, spray or douse intensively with a lot of water immediately to guarantee quick cooling.

### 5.3 Advice for firefighters

Dust mask, gloves & overall, self-contained breathing apparatus must be worn during firefighting.

### 5.4 Other Information

Azodicarbonamide will only burn if it is exposed to a flame and is self-extinguishing when the flame is removed.

## 6) ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Keep away from ignition sources. Wear protective clothing. Evacuate personnel to safe areas. Avoid breathing dust.

### 6.2 Environmental precautions

Prevent contamination of soil, drain and surface water. Product should not be allowed to enter into local drainage or sewer systems. Spillage should be removed, preferably by vacuum cleaner, taking care to avoid creating a dust cloud.

### 6.3 Methods and materials for containment and cleaning up

Pick up mechanically, by vacuum cleaner, or cover with inert material and sweep up. Store in labeled containers. Dispose of the material collected according to regulations. Dispose contaminated material as waste according to disposal consideration.

### 6.4 Reference to other sections

For disposal see section 13. For safe handling see section 7.
For PPE see section 8.

## 7) HANDLING AND STORAGE

| | | |
|---|---|---|
| 7.1 | Precautions for safe handling | Keep away from heat and direct sunlight. Prevent formation of dust. Any unavoidable deposit of dust must be regularly removed. Use appropriate industrial vacuum cleaners or central vacuum systems for dust removal. Ensure good ventilation/exhaustion at the workplace. Do not raise dust. Do not breathe dust and thermal decomposition products. Avoid contact with eyes, skin and clothing. |
| 7.2 | Information about fire and explosion protection | Keep ignition sources away. Do not smoke. Protect against electrostatic charges. Dust can combine with air to form an explosive mixture. Keep respiratory protective device available. |
| 7.3 | Conditions for safe storage, including any incompatibilities | Store only in the original receptacle. Store in a cool location. Keep at temperature not exceeding 50°C |
| 7.4 | Information about storage in one common storage facility | Do not store together with reducing agents, heavy-metal compounds, acids and alkalis (with which it can react). |
| 7.5 | Further information about storage conditions | Protect from heat and direct sunlight. Store in cool, dry conditions in well-sealed receptacles. Protect from humidity and water. Packaging containing Azodicarbonamide shouldn't be stacked more than two pallets high or compaction may occur. |

## 8) EXPOSURE CONTROLS/PERSONAL PROTECTION

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|---|---|---|
| 8.1 | Control parameter | Occupational exposure standards (HSE / MAK / ACGIH)<br>ACGIH TLV: TWA 5 mg/m$^3$<br>NIOSH REL: TWA 5 mg/m$^3$ |
| 8.2 | Exposure controls | |
| | **General protective and hygienic measures** | In general ensure good personal hygiene. During processing, ensure efficient ventilation in the working area. Wash hands before breaks and at the end of work.Keep away from foodstuffs, beverages and feed. |
| | **Respiratory protection** | Dust mask.Good ventilation is desirable and respiratory protection during dust formation. In case of brief exposure or low pollution use respiratory filter device (filter P2). In case of intensive or longer exposure, use self-contained respiratory protective device |
| | **Hand protection** | Protective gloves. The glove material has to be impermeable and resistant to the product/ the substance/ the preparation |
| | **Eye protection** | Wear appropriate protective eyeglasses or chemical safety goggles. |
| | **Skin Protection** | Wear appropriate protective gloves , protective clothing to prevent skin exposure and by use of skin-protecting agents |
| | **Body Protection** | Wear protective clothing to prevent skin exposure |

## 9) PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

| | | |
|---|---|---|
| a | Appearance<br>Colour | Solid powder<br>Colour : Yellow |
| b | Odour | Odourless |
| c | Odour threshold | Not applicable |
| d | pH (5% aq. Suspension) | 6.5-7.5 |
| e | Melting point/freezing point | Substance decomposes |
| f | Initial boiling point and boiling range (°C) | Not available |
| g | Flash point | Not available |
| h | Evaporation rate | Not Applicable |
| i | Flammability (Solid/Gas) | Not Applicable |
| j | Upper/lower flammability or explosive limits | Not Available |
| k | Vapour pressure | Not Available |
| l | Vapour density | Not Available |
| m | Relative density (g/cc) | ~1.66 |
| n | Water solubility | Insoluble in water |
| o | Partition coefficient : octanol/water | No data available |
| p | Auto ignition temperature | No data available |
| q | Decomposition temperature (°C) | 186-203 |
| r | Viscosity | No data available |
| s | Oxidizing properties | No data available |

**9.2 Other information** — No data available

## 10) STABILITY AND REACTIVITY

**10.1 Reactivity** — No data available

**10.2 Chemical stability** — Stable under ordinary conditions

**10.3 Possibility of hazardous reactions** — No data available

**10.4 Conditions to avoid** — Thermal decomposition /conditions to be avoided: No decomposition if used and stored according to specifications. Avoid storing close to alkalis. To avoid thermal decomposition do not overheat.

SADT > 75 °C

**10.5 Incompatible material** — Alkalis. Dangerous reactions with strong reducing agent.Exothermic reaction. Risk of dust explosion

**10.6 Dangerous decomposition products** — CO, $NH_3$

# 11) TOXICOLOGICAL INFORMATION

## 11.1 Information of Toxicological effect

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|---|---|
| **Acute toxicity** | LD 50 (Oral)- rat > 6800 mg/kg<br>LD 50 (Dermal) rabbits >2000mg/kg<br>LC 50 (rats) >200 mg/L(h) |
| **Skin corrosion/ irritation** | May be mildly irritating to skin |
| **Serious eye damage/ eye irritation** | May be mildly irritating to eyes |
| **Respiratory or skin sensitization** | Inhalation of dust can cause lung sensitization. |
| **Germ cell mutagenicity** | Identified as a mutagen in bacterial system, but it was not mutagenic in mammalian cell in vitro test systems or in two mammalian assays in vivo using bone marrow. |
| **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 |

**Potential health effects**

| | |
|---|---|
| **Inhalation** | May be harmful if inhaled. May cause respiratory tract irritation. |
| **Ingestion** | May be harmful if swallowed. |
| **Skin** | Toxic if absorbed through skin. May cause skin irritation. |
| **Eyes** | May cause eye irritation. |
| **Signs and Symptoms of Exposure** | To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated. |

**Carcinogenicity**

| | |
|---|---|
| **IARC** | No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. |
| **ACGIH** | No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH. |
| **NTP** | No components of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. |
| **OSHA** | No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. |

## 12) ECOLOGICAL INFORMATION

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| **12.1 Toxicity** | Fathead minnow LC50 (48 h)>50mg/L (Pimephales promelas)<br>Water flea EC50 (48 h) 11mg/L (Daphnia magna) |
| **12.2 Persistence and degradability** | Biodegradability (30 days).....around 70 % |
| **12.3 Bioaccumulative potential** | LC50 (rats) >200 mg/L (h) |
| **12.4 Mobility in soil** | Immobilization |
| **12.5 Results of PBT and vPvB assessment** | Not carried out |
| **12.6 Other adverse effects** | No data available |

## 13) DISPOSAL CONSIDERATIONS

**13.1 Waste treatment methods**

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|---|---|
| Product | Recommendation- Must not be disposed together with household garbage. Do not allow product to reach sewage system. After prior treatment product has to be disposed of in an incinerator for hazardous waste adhering to the regulations pertaining to the disposal of particularly hazardous waste. Recover or recycle if possible, otherwise perform incineration. |
| Contaminated packaging | Non contaminated packaging may be recycled. Empty contaminated packaging and these may be recycled after thorough and proper cleaning. Packaging that may not be cleaned has to be disposed of in the same manner as the product. Disposal must be made according to official regulations. |

## 14) TRANSPORTATION INFORMATION

This product is regulated by ADR/RID/IMDG as follows:

| | |
|---|---|
| **LAND TRANSPORT (ADR/RID)** | |
| **UN number** | 3242 |
| **Class** | 4.1 (SR 1) |
| **Packaging group** | II |
| **Labels** | 4.1 |
| **MARINE TRANSPORT(IMDG)** | |
| **UN Number** | 3242 |
| **UN proper shipping name** | AZODICARBONAMIDE |
| **Chemical name** | AZODICARBONAMIDE |
| **Transport hazard class(es)** | 4.1 |
| **Packaging group** | II |
| **EmS number** | F-J, S-G |
| **Labels** | 4.1 |
| **Marine pollutant** | No |
| **Transport in bulk according to Annex II of MARPOL73/78 and the IBC code** | N/A |
| **Air transport ICAO/TI and IATA/DGR** | Air Transport not allowed |

## 15) REGULATORY INFORMATION

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

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|---|---|
| **SARA** | Section 311/312 |
| **Hazards** | Fire Hazard, Acute Health Hazard |
| **Section 313 component** | This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313. |
| **Federal and State Regulations** | TSCA 8(b) inventory: Azodicarbonamide |
| **OSHA** | Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). |
| **EINECS** | This product is on the European Inventory of Existing Commercial Chemical Substances (EINECS No. 204-650-8). |
| **Canada** | Listed on Canadian Domestic Substance List (DSL). |
| **China** | Listed on National Inventory. |
| **Japan** | Listed on National Inventory (ENCS). |
| **Korea** | Listed on National Inventory (KECI). |
| **Philippines** | Listed on National Inventory (PICCS). |
| **Australia** | Listed on AICS |

## 16) OTHER INFORMATION

**Health: 2** **Flammability: 3** **Reactivity: 1** **PPI: X**

| | |
|---|---|
| **0(HMIS)** | No hazard |
| **1(HMIS)** | Slight hazard |
| **2(HMIS)** | Moderate hazard |
| **3(HMIS)** | Serious hazard |
| **4(HMIS)** | Severe hazard |
| **X(HMIS)** | Personal protection rating to be supplied by user depending on usage conditions. |

**Information which has been added, deleted or revised**

This safety data sheet is drawn up to comply with the requirements of OSHA Hazard communication standard.

This document contains important information to ensure the safe storage, handling and use of this product. The information in this document should be brought to the attention of the person in your organisation responsible for advising on safety matters.

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.

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