

Material Safety Data Sheet (MSDS / SDS)

ADC Blowing Agent (Azodicarbonamide) - Standard Grade

SECTION 1: Identification

Product Name	Azodicarbonamide (ADC)
Synonyms	ADC, Azodicarbonamide, ADCA, Azobisformamide
CAS No.	123-77-3
Recommended Use	Chemical foaming/blowing agent for PE, EVA and rubber foam production
Manufacturer / Supplier	Ochnology Solution Pvt. Ltd., B-153, Sector-4 Defence Colony, Dehradun, Uttarakhand, India - 248001
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SECTION 2: Hazard(s) Identification

GHS Classification: Respiratory Sensitisation Category 1 (H334); Specific Target Organ Toxicity - Single Exposure Category 3, Respiratory Irritation (H335); Skin Sensitisation Category 1 (H317, in some classifications)

Signal Word: Danger

Hazard Statements:

- H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
- H335 - May cause respiratory irritation
- H317 - May cause an allergic skin reaction (relevant in some regulatory classifications)

Precautionary Statements:

- P261 - Avoid breathing dust
- P264 - Wash hands thoroughly after handling
- P271 - Use only outdoors or in a well-ventilated area
- P280 - Wear protective gloves/eye protection/respiratory protection
- P285 - In case of inadequate ventilation, wear respiratory protection

- P304+P341 – IF INHALED: If breathing is difficult, remove person to fresh air and keep at rest in a position comfortable for breathing
- P342+P311 – If experiencing respiratory symptoms, call a POISON CENTER/doctor

SECTION 3: Composition / Information on Ingredients

Component	CAS No.	Concentration (w/w)
Azodicarbonamide (ADC)	123-77-3	Min. 99.0%
Moisture (residual)	–	< 0.5%

SECTION 4: First-Aid Measures

Eye Contact	Rinse with plenty of water for several minutes. Remove contact lenses if present. Seek medical attention if irritation persists.
Skin Contact	Wash with soap and water. Seek medical attention if irritation or a rash develops.
Inhalation	Move to fresh air immediately. If breathing is difficult or wheezing/asthma-like symptoms occur, seek medical attention promptly – azodicarbonamide is a recognised respiratory sensitiser and repeated exposure can lead to occupational asthma.
Ingestion	Rinse mouth with water. Seek medical attention if a large quantity is ingested or discomfort occurs.

SECTION 5: Fire-Fighting Measures

- Decomposes exothermically on heating (from $\approx 195^{\circ}\text{C}$), releasing nitrogen, carbon monoxide and carbon dioxide – this is the product's intended function but represents a real thermal hazard in fire conditions
- Suitable extinguishing media: water spray/fog – avoid confining decomposing material, which can pressurise
- Fire-fighters should wear full protective equipment and SCBA given the release of toxic decomposition gases (including trace ammonia and semicarbazide) in a fire

SECTION 6: Accidental Release Measures

- Avoid generating dust during clean-up; use wet suppression or vacuum with HEPA filtration where practical
- Keep away from heat and ignition sources during clean-up – product decomposes exothermically when heated
- Sweep or vacuum into suitable containers for reuse or disposal
- Wear respiratory protection and full PPE during clean-up given the respiratory sensitisation hazard

SECTION 7: Handling and Storage

- Avoid generating and inhaling dust; use local exhaust ventilation and, where practical, closed handling systems given the respiratory sensitisation hazard
- Workers with pre-existing asthma or respiratory sensitisation should be medically evaluated before handling this material regularly
- Store in a cool, dry, well-ventilated area away from heat and ignition sources
- Keep containers tightly sealed to prevent moisture pickup

SECTION 8: Exposure Controls / Personal Protection

Occupational Exposure Limits	ACGIH TLV: 0.1 mg/m ³ (respirable fraction), 8-hr TWA for azodicarbonamide – confirm current jurisdiction-specific limit given documented occupational asthma cases in exposed workers
Engineering Controls	Local exhaust ventilation and closed/automated handling systems strongly recommended given the respiratory sensitisation hazard
Eye/Face Protection	Safety glasses or goggles recommended
Hand Protection	Chemical-resistant gloves recommended
Respiratory Protection	Respiratory protection (NIOSH-approved particulate respirator, minimum) required per a documented respiratory protection programme given the respiratory sensitisation classification

SECTION 9: Physical and Chemical Properties

Property	Unit	Value
Appearance	–	Yellow to light yellow powder
Odour	–	Faint characteristic odour
Decomposition Temperature	°C	195 – 215
Solubility in Water	–	Practically insoluble
Flash Point	–	Not applicable (solid; decomposes rather than burns in the traditional sense)

SECTION 10: Stability and Reactivity

- Stable under normal, dry, cool storage conditions
- Decomposes exothermically above $\approx 195^{\circ}\text{C}$, releasing nitrogen, CO and CO₂ gas – this is the product's intended foaming function under controlled processing conditions
- Incompatible materials: strong oxidising agents, strong acids, strong reducing agents

SECTION 11: Toxicological Information

- Azodicarbonamide is a well-documented respiratory sensitiser; occupational asthma has been reported in workers with repeated inhalation exposure in the plastics/rubber processing industry
- May cause allergic skin reactions in sensitised individuals
- Low acute oral toxicity based on published data
- Note: azodicarbonamide's use as a food additive (flour bleaching/dough conditioner, E927b) is banned in the EU and restricted in several other jurisdictions; this has no bearing on its established, permitted use as an industrial polymer foaming agent, which is a distinct application

SECTION 12: Ecological Information

- Low acute aquatic toxicity based on available data
- Practically insoluble in water, limiting environmental mobility
- Avoid unnecessary release to waterways as general environmental good practice

SECTION 13: Disposal Considerations

- Dispose of product and packaging in accordance with local, state and national regulations
- Avoid disposal methods involving uncontrolled heating given the exothermic decomposition hazard
- Not expected to require classification as hazardous waste under standard criteria for the unreacted product; confirm local requirements before disposal

SECTION 14: Transport Information

UN Number	Not applicable for standard commercial ADC blowing agent formulations – confirm current classification with carrier given azodicarbonamide's potential self-heating/decomposition properties in bulk
Proper Shipping Name	Not regulated for transport under standard conditions (IMDG / ADR / IATA / RID) – confirm with DG specialist for bulk shipments
Transport Hazard Class	Not classified under standard commercial formulations
Packing Group	Not applicable
Environmental Hazards	None specifically identified under standard transport classification criteria

SECTION 15: Regulatory Information

- Widely listed on major chemical inventories (TSCA, REACH, ECL, etc.) as an existing/registered substance for industrial use

- Banned as a food additive in the EU (E927b) – this restriction applies specifically to food-contact/food-additive use and does NOT apply to industrial polymer foaming agent applications, which remain standard and permitted
- Buyers/importers should confirm occupational exposure and respiratory sensitiser labelling requirements applicable to their specific jurisdiction

SECTION 16: Other Information

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This SDS has been compiled based on general industry data and knowledge for ADC Blowing Agent (Azodicarbonamide) products of this type as commercially supplied. It is intended as a general handling and safety guide and does not replace a batch-specific SDS from the manufacturing mill, which should be obtained and reviewed for each shipment where regulatory submission is required, particularly regarding respiratory sensitisation exposure controls.

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