



Chemical Foaming Agent

PRODUCT INFORMATION

CELOGEN® AZ

Azodicarbonamide

CELOGEN AZ is the most widely used chemical foaming agent for producing many types of polymeric closed-cell foam. It is also used as a nucleator in some physical foaming processes. Polymers foamed with azodicarbonamide include rubber, polyolefins, vinyls, styrenics, thermoplastic elastomers of all types, and engineering plastics such as polyphenylene oxide. CELOGEN AZ is the major component in a variety of modified azodicarbonamide blends developed to meet special requirements in foam processes. Modified azodicarbonamides include blends with activators to reduce decomposition temperature, flow-treated types to improve flowability, liquid dispersions for vinyl plastisols, and nonplateout grades that reduce foaming agent plateout (cyanuric acid). A number of particle size grades of CELOGEN AZ are also available. In polymer systems containing activators, particle size may be used to adjust the rate of decomposition when needed, especially in systems where crosslinking or fusion take place. Typical activators used to reduce decomposition temperature include zinc oxide, zinc stearate, zinc octoate, urea, and vinyl stabilizers. The amount of activator required will vary depending on the reduction in temperature desired.

PRODUCT DESCRIPTION

Chemical Composition: Azodicarbonamide

Appearance: Pale yellow to yellow-orange powder

Decomposition Temperature: 401-415°F (205-213°C)

Specific Gravity: 1.65

Bulk Density: 31-38 lbs./cu.ft. (497-609 kg/m³)

Gas Composition: N₂, CO, CO₂, NH₃

Gas Evolution: 210-220 cc/g

Decomposition Residues: Hydrazodicarbonamide, cyanuric acid, urazole, cyamelide, urea

Particle Size Grades Fisher Sub-Sieve Avg. Particle Size, μ

AZ-120 2.0-2.4

AZ-130 2.4-3.0

AZ-140 3.0-4.0

AZ-150 4.0-5.0

AZ-180 8.0-12.0

AZ-199 9.5-13.0

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The recommendations for the use of our products are based on tests believed to be reliable. However, we do not guarantee the results to be obtained by others under different conditions. Nothing in this bulletin is intended as a recommendation to use our products so as to infringe on any patent.

SOLUBILITY

CELOGEN[®] AZ is moderately soluble in dimethylsulfoxide (DMSO) and dimethylformamide (DMF). It is soluble with decomposition in aqueous bases to form the corresponding azodicarboxylate salt with the evolution of ammonia. It is slightly soluble in water and polyalkylene glycols. It is insoluble in benzene, methanol, acetone, and ethylene dichloride.

HANDLING PRECAUTIONS

This product is dusty, and good local exhaust ventilation in mixing and handling areas is highly recommended. A dust mask and protective clothing must be worn by anyone handling this product. CELOGEN AZ is a known pulmonary sensitizer, and some individuals may develop asthma-like symptoms when exposed to the dust from this material. Wash thoroughly after handling.

STORAGE

The storage stability of CELOGEN AZ is excellent under normal conditions. A maximum storage temperature of 167°F (75°C) is recommended. Containers not in use should be kept closed. The product should be stored in a cool, dry area away from any sources of heat, spark, open flames, or direct sunlight. CELOGEN AZ is not hygroscopic. *Please refer to the CELOGEN AZ MSDS for additional information.*

FDA SANCTIONS

21CFR172.806	Azodicarbonamide (flour maturing agent)	Not to Exceed 45 ppm in Flour
21CFR175.300	Resinous and Polymeric Coatings (can end cements)	Not to Exceed the Amount Required to Achieve the Desired Effect
21CFR177.1210	Closures with Sealing Gaskets for Food Containers	Not to Exceed 2 Weight Percent of Gasket Composition As a Foaming Agent in the Manufacture of Polyethylene Complying with 21CFR177.1520 (c), Not to Exceed 5 Weight Percent of Gasket Composition
21CFR177.2600	Rubber Articles Intended for Repeated Use	Not to Exceed 5 Weight Percent of Rubber Product
21CFR178.3010	Adjuvant Substances Used in the Manufacture of Foam Plastics	For Use As a Foaming Agent in Polyethylene Complying with Item 2.1 in 29CFR1520 (c) of this chapter at a Level Not to Exceed 5 Weight Percent of Finished Foam Polyethylene

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