



EVERKEM  
FLAME RETARDANTS & ADDITIVES

**PRODUCT GUIDE**  
BLOWING AGENTS



# “WHO WE ARE,”

## **EVERKEM** is leader in the distribution of chemical additives since thirty years

WITH A CONTINUOUS EXPANSION OF ITS BUSINESS WORLDWIDE, FROM EUROPE TO TURKEY TO BOTH NORTH AND SOUTH AMERICA.

We are specialized in flame retardants, while our portfolio includes also Antioxidants, UV Adsorbers, Blowing agents, Titanium Dioxide, etc. With two warehouses, respectively of 1'500 and of over 10'000 square meters, we are ready to promptly satisfy every requests from our customers. Lastly, our head office in Milan (Italy) hosts 70 square meters of analytical laboratory, which allows EVERKEM to always provide high-quality materials.

EVERKEM commercial headquarter is located in Milan, the thriving economic capital of Italy, whereas the administrative office and the 1'500 m<sup>2</sup> warehouse (equiped to store up to 1'000 MT of liquid additives) are close to Ravenna's port. The second storage facility is strategically located in the northern part of Milano province and another one dedicated to ADR products is being established near Lodi.





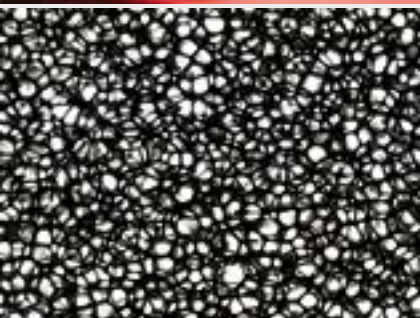
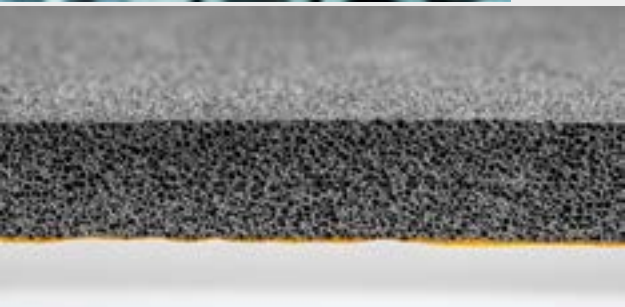
# BLOWING AGENTS

## What is a blowing agent?

IT IS AN ADDITIVE WHICH ALLOWS TO OBTAIN FOAMED PRODUCTS.

Physical and chemical blowing agents are available on the market, with the first ones that are, in general, low boiling point organic solvent which evaporates during the production process. On the other hand, chemical blowing agents, such as Azodicarbonamide and OBSH, are added into polymeric formulations during manufacturing then decomposed via thermal treatment in order to release gas bubbles and obtain materials with a cellular structure (either with pen or closed-cells).

In that way, the final piece is characterized by a low density, essential to produce a wide range of products that are used on a daily basis, from PVC shoes soles to Polyethylene insulations.



## Azodicarbonamide



**Azodicarbonamide is one of the most widely employed blowing agent for the plastic sector.**

When heated above 200 °C it decomposes into several gaseous products, such as CO<sub>2</sub>, H<sub>2</sub>O, N<sub>2</sub>, etc. Azodicarbonamide can be blended with activators (kicker) that lower the decomposition temperature and speed up the release of the gases. Available in different granulometries for different applications, from shoes soles to wall papers.

Other Names: ADCA, ADC, ADCM, etc.

Chemical Name: C,C'-azodi(formamide)

Chemical Formula: C<sub>2</sub>H<sub>4</sub>N<sub>4</sub>O<sub>2</sub>

CAS: 123-77-3

EC Number: 204-650-8

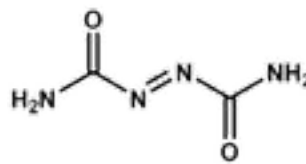
Molecular Weight: 116.08 g/mol

UN Number: 3242

### TYPICAL PROPERTIES

pH:	6.5 - 7.5
Appearance:	Yellow Powder
Ashes (%):	≤ 0.5
Moisture (%):	≤ 0.5
Decomposition Temperature (°C):	200 - 208
Gas Volume (ml/g):	220 - 230

### CHEMICAL STRUCTURE:



## Benzenesulphonohydrazide



**OBSH is a blowing agent in form of white powder, which does not affect the**

color of the final material after being decomposed.

In addition, its decomposition temperature is relatively low and close to 150 °C.

It may be blended with inert inorganic additives in order to stabilize the product.

Other Names: OBSH, etc.

Chemical Name: 4,4'-oxydi (benzenesulphonohydrazide)

Chemical Formula: C<sub>12</sub>H<sub>14</sub>N<sub>4</sub>O<sub>5</sub>S<sub>2</sub>

CAS: 80-51-3

EC Number: 201-286-1

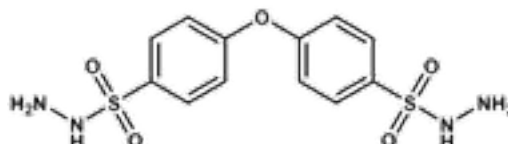
Molecular Weight: 358.40 g/mol

UN Number: 3226

### TYPICAL PROPERTIES













pH:	6.5 - 7.5
Appearance:	White powder
Ashes (%):	≤ 0.5
Moisture (%):	≤ 0.5
Decomposition Temperature (°C):	147 - 158
Gas Volume (ml/g):	115 - 125

### CHEMICAL STRUCTURE:






## 1. AZODICARBONAMIDE

### 1.1 PURE PRODUCTS

BRAND NAME	STOCK	PARTICLE SIZE DISTRIBUTION (D50, $\mu\text{m}$ )	GAS VOLUME (G/MOL) *	DECOMPOSITION TEMPERATURE ( $^{\circ}\text{C}$ )	DESCRIPTION AND APPLICATIONS
EVERFOAM 24		2 - 4	220 - 230	200 - 208	Used for formulations based on PVC, Polyolefyn, Rubber, TPR, Etc.
EVERFOAM 35 ES		3 - 5	220 - 230	200 - 208	Used for formulations based on PVC, Polyolefyn, Rubber, TPR, Etc.
EVERFOAM 35 I		3 - 5	220 - 230	200 - 208	Used for formulations based on PVC, Polyolefyn, Rubber, TPR, Etc. The unique particle shape increase the flowability of this material
EVERFOAM 35 T		3 - 5	220 - 230	200 - 208	Used for formulations based on PVC, Polyolefyn, Rubber, TPR, Etc. The unique particle size distribution was developed to boost the gas evolution
EVERFOAM KY70		5.5 - 6.5	220 - 230	200 - 208	Used for formulations based on PVC, Polyolefyn, Rubber, TPR, Etc.
EVERFOAM 68		6 - 8	220 - 230	200 - 208	Used for formulations based on PVC, Polyolefyn, Rubber, TPR, Etc.
EVERFOAM D8		6.5 - 8.5	220 - 230	200 - 208	Used for formulations based on PVC, Polyolefyn, Rubber, TPR, Etc.
EVERFOAM KY 30		8.5-10	220 - 230	200 - 208	Used for formulations based on PVC, Polyolefyn, Rubber, TPR, Etc.
EVERFOAM D13		10-12.5	220 - 230	200 - 208	Used for formulations based on PVC, Polyolefyn, Rubber, TPR, Etc.
EVERFOAM KY10		12.5-18	220 - 230	200 - 208	Used for formulations based on PVC, Polyolefyn, Rubber, TPR, Etc.
EVERFOAM 1822		18 - 22	220 - 230	200 - 208	Used for formulations based on PVC, Polyolefyn, Rubber, TPR, Etc.
EVERFOAM 1822 T		18 - 22	220 - 230	200 - 208	Used for formulations based on PVC, Polyolefyn, Rubber, TPR, Etc. The unique particle size distribution was developed to boost the gas evolution

### 1.2 MODIFIED GRADES

BRAND NAME	STOCK	KICKER / ACTIVATOR CONTENT (%)	GAS VOLUME (G/MOL) *	DECOMPOSITION TEMPERATURE ( $^{\circ}\text{C}$ )	DESCRIPTION AND APPLICATIONS
EVERFOAM K185		$\geq 20$	220 - 230	$\geq 185$	Used for formulations based on Rigid and Flexible PVC, Rubber, Thermoplastic and Thermosetting Resins. Kicker is ZnO
EVERFOAM K185 PLUS		$\geq 30$	220 - 230	$\geq 185$	Used for formulations based on Rigid and Flexible PVC, Rubber, Thermoplastic and Thermosetting Resins. Kicker is ZnO
EVERFOAM K		$\geq 10$	$\geq 215$	$\geq 140$	PVC, PS, PE, PP, EVA, TPR, Rubber, Etc. Organic activator inside

\* at atmospheric pressure






Available on the Italian Stock - Prompt Delivery






Available upon request

## 2. BENZENSULPHONOHYDRAZIDE

BRAND NAME	STOCK	PARTICLE SIZE DISTRIBUTION (D50, µm)	GAS VOLUME (G/MOL) *	DECOMPOSITION TEMPERATURE (°C)	DESCRIPTION AND APPLICATIONS
EVERFOAM OBSH		9.5 - 13.5	115 - 120	152 - 158	Used for formulations based on Rigid and Flexible PVC, Rubber, Thermoplastic and Thermosetting Resins
EVERFOAM OBSH NE		7 - 11	100 - 110	147 - 153	Used for formulations based on Rigid and Flexible PVC, Rubber, Thermoplastic and Thermosetting Resins
EVERFOAM OBSH LP500		5 - 7	115 - 120	152 - 158	Special grade for wallpaper application Thermoplastic and Thermosetting Resins

\* at atmospheric pressure

## 3. MASTERBATCH

BRAND NAME	STOCK	ACTIVE CONTENT (%)	KICKER CONTENT (%)	DECOMPOSITION TEMPERATURE (°C)	DESCRIPTION AND APPLICATIONS
EVERFOAM MB 25 E		25	8 - 12	≥ 160	3x3 mm granules of Azodicarbonamide and kicker masterbatch in EVA
EVERFOAM MB 25 KPE		25	8 - 12	≥ 160	3x3 mm granules of Azodicarbonamide and kicker masterbatch in PE
EVERFOAM MB 373 E		35 - 39	1 - 5	≥ 160	3x3 mm granules of Azodicarbonamide and kicker masterbatch in EVA

## 4. BLENDS

Other blends of Blowing Agents are also available and with kickers, anti-caking agents and coatings.

**If you don't find the desired product in this product guide, don't hesitate to contact us by phone or mail.**

**We are at your disposal to find the proper solution to all your needs.**

## ADCA and regulations. What is SVHC?

Azodicarbonamide has been identified as Substance of Very High Concern (SVHC) due to its classification as respiratory sensitizer and included to the Candidate List in December 2012.

Since the listing, ADCA has been considered for inclusion in Annex XIV of the REACH Regulation (inclusion in Annex XIV will trigger the REACH authorisation process).

- A decision was taken in 2016 to postpone the listing of ADCA in Annex XIV. The European Commission decided to re-open this discussion in 2018 but it was again decided to postpone the Annex XIV listing.
- While it appears unlikely in the short term that ADCA will be listed in Annex XIV, if such a decision is taken by the European Commission, this will mean that in order to use ADCA in your applications, each use will need to be authorised – either by yourself or by your supplier.



Available on the Italian Stock - Prompt Delivery



Available upon request

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