



**Tramaco**



**Chemical Foaming Agents**  
*Competence in Foaming*



## TRACEL® Chemical Foaming Agents

Chemical foaming agents are used in a wide range of applications in plastics and rubber processing.

By choosing the right foaming agent system

- weight reduction
- raw material and cost saving
- dimensional stability
- heat insulation
- noise absorption
- special surface effects

can be achieved.

Chemical foaming agents decompose during processing in a chemical reaction which is induced by heat.

The decomposition can be exothermic or endothermic. Exothermic foaming agents release heat while decomposing, thus providing a fast and complete decomposition.

The effective blowing gas released is mainly nitrogen. The most important exothermic foaming agents are Azodicarbonamide (ADC) and the Sulfonylhydrazides (OBSh, TSH and BSH).

During the decomposition of endothermic foaming agents heat is consumed. The gas evolution can be controlled by the process temperature.

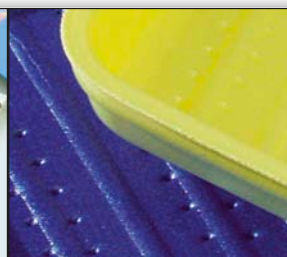
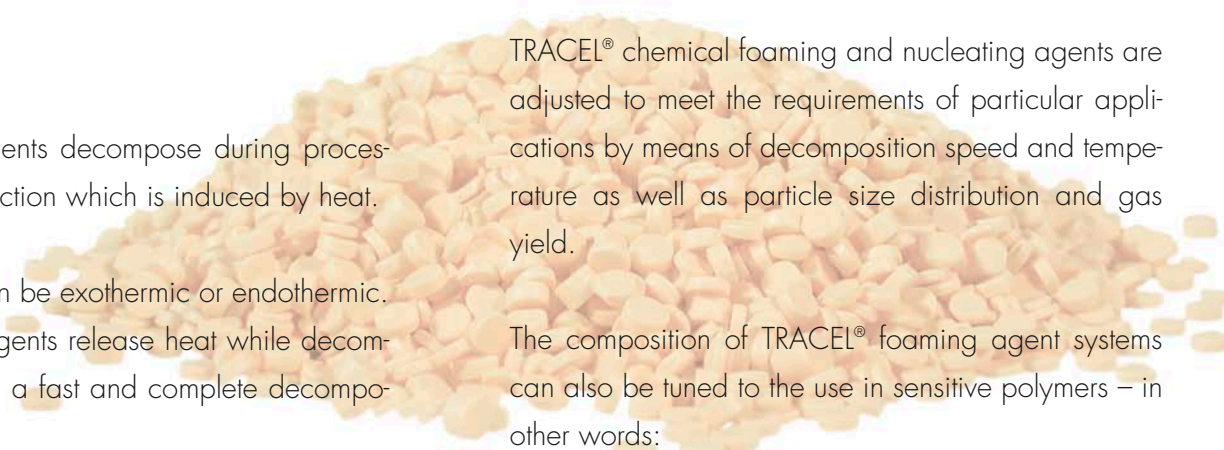
Endothermic foaming agents are physiologically harmless and thus suitable for food contact applications. The effective blowing gas is mainly carbon dioxide.

Endothermic foaming agents are also used as nucleating agents in physical foaming processes in order to achieve a uniform cell structure.

TRACEL® chemical foaming and nucleating agents are adjusted to meet the requirements of particular applications by means of decomposition speed and temperature as well as particle size distribution and gas yield.

The composition of TRACEL® foaming agent systems can also be tuned to the use in sensitive polymers – in other words:

There is a suitable TRACEL® foaming agent for nearly every thermoplastic or rubber.



## TRACEL® Chemical Foaming Agents – Applications

- TRACEL® in extrusion
  - weight reduction
  - heat and sound insulation
  - advantages in processing of the finished product
  - surface effects
- TRACEL® in rubber
  - weight reduction
  - heat and sound insulation
  - sealants and gaskets (automotive and building industry)
- TRACEL® in plastisols
  - surface effects
  - vibration and sound deadening
  - closures for packaging industry
- TRACEL® in injection moulding
  - weight reduction
  - dimensional stability / sink mark prevention
  - cycle time reduction
  - melt flow improvement
- TRACEL® as nucleating agents in direct gassing process
  - homogeneous and finer cell structure
  - improvement of physical properties



## TRACEL® Chemical Foaming Agents – Delivery Forms

- polymer-bound granules
  - dust-free
  - excellent flow properties
  - easy and clean dosage
  - good storage stability
  - easy to mix with polymer granules
- EPR-bound granules
  - fast distribution in rubber matrix due to pre-dispersion
  - easy handling, transportation and storage
- Pastes / Oil-coated powders
  - dust-free / low dust
  - easy and clean dosage

### Powders

- good dispersability in polymers
- easy to mix with polymer powders





## PRODUCT RANGE

<p><b>UNICELL/TRACEL®</b> basic foaming agents</p>	<p><b>TRACEL®</b> powders / pastes</p>	<p><b>TRACEL®</b> polymer-bound granular masterbatches</p>	<p><b>ADDITIVES</b> polymer-bound granular masterbatches</p>
<p><b>exothermic basic foaming agents</b> Azodicarbonamide (ADC) Oxy-bis-benzene-sulfonylhydrazide (OBSH) Toluenesulfonylhydrazide (TSH) Benzenesulfonylhydrazide (BSH) Toluenesulfonylsemicarbazide (TSH) 5-Phenyltetrazole (5 PT) DNPT</p>	<p><b>modified exothermic foaming agents</b></p>	<p><b>modified exothermic foaming agent systems</b></p>	<ul style="list-style-type: none"> <li>• <b>TRACELAT</b> activators</li> <li>• <b>TRACLEAN</b> purging compounds</li> <li>• <b>TRACOMB</b> combibatches</li> <li>• <b>TRACRYL</b> cross-linking coagents</li> <li>• <b>TRAFAM</b> flame retardants</li> <li>• <b>TRAPLAST</b> permanent lubricating agents</li> <li>• <b>TRASTAB</b> stabilizers</li> <li>• <b>TRATAC</b> cross-linking coagents</li> <li>• <b>TRASTATIC</b> antistatic agents</li> <li>• <b>TRASLIP</b> slip and mould release agents</li> <li>• <b>TRAPOR</b> cell stabilizers</li> </ul>
<p><b>endothermic foaming and nucleating agent systems</b></p>	<p><b>endothermic foaming and nucleating agent systems</b></p>		
<p><b>endo- / exothermic foaming agent systems</b></p>	<p><b>endo- / exothermic foaming agent systems</b></p>		
<p><b>Specialities</b> UNICELL MS microballoons UNIPASTE activators</p>	<p><b>oil-coated foaming agents</b></p>	<p><b>EPR-bound foaming agent systems</b></p>	





TRAMACO GmbH was founded in 1973. In the beginning trading with chemical specialties was the main focus. Nowadays TRAMACO's main activity is the marketing of their own manufactured products.

Thanks to a broad range of high quality basic raw materials from strong suppliers, proprietary specialties from its own production as well as competent technical service TRAMACO is a reliable partner for

users of chemical foaming agents, adhesion promoters and additives.

Since 1979 TRAMACO has been a member of the ROWA GROUP. The use of joint resources in development, sourcing, production and marketing provides synergistic effects and thus makes TRAMACO nowadays a strong partner within the ROWA GROUP.



In addition to the TRACEL® chemical foaming agents TRAMACO offers primers and adhesion promoters for polyolefinic substrates under the brand names TRAPYLEN® and TRAPUR®. These products are used for coating, printing or bonding onto plastic substrates, where adhesion is difficult to obtain (mainly polyolefins like TPO, PE, PP, PP-blends etc.).

The main field of application is the coating of bumpers, dashboards and interior parts for the automotive industry. Other applications of TRAPYLEN® and TRAPUR® are in the production of adhesive tapes and hot stamping foils, coating of furniture and sealing profiles as well as an additive in printing inks and adhesives to increase the adhesion properties.



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