



WHY GENERANT MANUFACTURERS CONSISTENTLY CHOOSE THE SHEPHERD CHEMICAL COMPANY

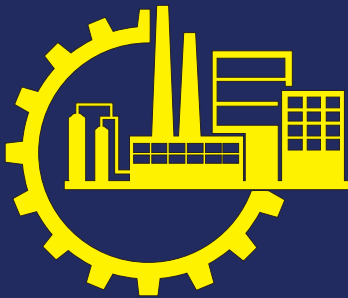
THE RIGHT TECHNOLOGY

- Metal Chemistry Expertise
- Particle Engineering
- Process Development
- Customized Products

THE RIGHT PARTNER

- 20 Years of BCN Experience
- 30 MM+ Pounds Produced
- Thousands of Lives Saved Every Year
- Confidential and Collaborative

THE RIGHT DELIVERY



RAPID NEW PRODUCT SCALE-UP



CAPACITY FOR GROWING DEMAND

Reliable Global Distribution



98%
Shipments
On Time
& Complete



BASIC COPPER NITRATE A CASE STUDY

CHALLENGE

Industries that require highly reliable products and systems understand the importance of choosing experts who have long histories of designing precision-controlled technology with exceptional performance and consistent delivery. In the airbag industry, for example, lives are at stake and technologies must meet rigorous standards of performance—especially when it comes to effective and consistent airbag inflation. Airbags serve as a life-saving technology for the more than 5 million people who have a driving accident every year, reducing the fatality rate of crashes by 33%. Yet few understand the high precision chemistry behind the airbag's pyrotechnic technology. **The Shepherd Chemical Company understands the demands of high reliability industries and the importance of delivering just-in-time, precision-engineered inorganic chemicals that meet narrow specifications and achieve high performance.**

SOLUTION

Shepherd Chemical is a trusted partner for the customized design and development of precisely engineered particles in metal chemistry. In the world's leading pyrotechnic airbag technology, for instance, a rapid reaction between Basic Copper Nitrate and Guanidine Nitrate produces nitrogen gas, which inflates the airbag—producing life-saving results. Deviations in response by 70 milliseconds can lead to devastating outcomes. Lives depend on the consistent production of expertly designed particles for effective airbag inflation. **Our expertise in metal chemistry allows us to precisely engineer particles to meet specific requirements in surface area, particle size and density—all of which impact the kinetics, temperature, and ultimate speed of airbag inflation.** We are proud to be the world's leading supplier and trusted developer of Basic Copper Nitrate (BCN) to the airbag market.

Visit [www.
ShepChem.com](http://www.ShepChem.com)
to see our full
infographic!

RESULTS

- Over 20 Years of BCN Experience
- 98% of Orders Sent on Time & Complete
- 30+ Million Pounds Produced
- Thousands of Lives are Saved Every Year

WHY CHOOSE SHEPHERD

Our expertise in metal chemistry and 100 year history as a family owned and operated chemical manufacturer makes us the ideal partner for custom particle design and development. We consistently serve as the right partner for industries that require high reliability, safety and regulation. From propellants to catalysts, **The Shepherd Chemical Company is trusted when lives matter.**

**LEARN MORE AT:
WWW.SHEPCHEM.COM**

CREATING VALUE
BRIGHTENING LIVES

**WHY HIGH RELIABILITY INDUSTRIES CHOOSE
THE SHEPHERD CHEMICAL COMPANY**

1/50
PROBABILITY OF BEING IN A WRECK
DURING A YEAR

33%
PERCENT OF ALL WRECKS THAT
RESULT IN INJURY OR DEATH

Airbags serve as a life-saving technology for the more than 5 million people who have a driving accident every year. Yet few understand the high precision chemistry behind the airbag's pyrotechnic technology. The Shepherd Chemical Company understands the high demands of this industry and the importance of delivering just-in-time, precision engineered and highly reliable inorganic chemicals.

AIRBAG MANUFACTURERS CONSISTENTLY CHOOSE

Shepherd

AS A SUPPLIER FOR THIS LIFE SAVING TECHNOLOGY

AIRBAG INFLATOR

In the world's leading pyrotechnic airbag technology, a rapid reaction between Basic Copper Nitrate and Guanidine Nitrate produces nitrogen gas, which inflates the airbag—producing life-saving results. Deviations in response by 70 milliseconds can lead to devastating outcomes. Lives depend on consistent production of expertly designed particles for effective airbag inflation. Shepherd Chemical is the world's leading supplier and trusted developer of Basic Copper Nitrate (BCN) to the airbag market.

**THE SHEPHERD CHEMICAL COMPANY:
TRUSTED WHEN LIVES MATTER.**