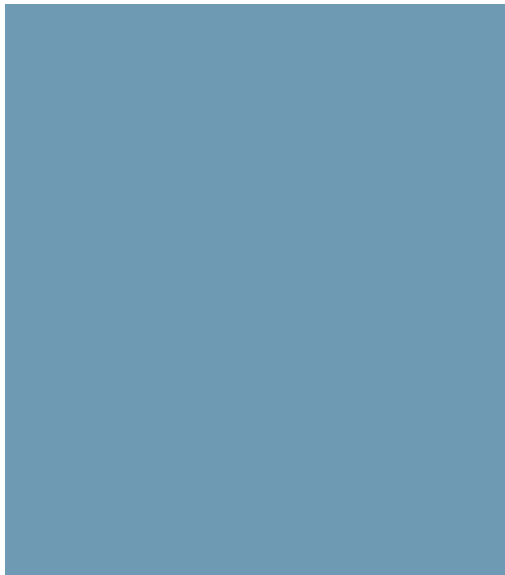


**BUSE**



**DRY ICE TECHNOLOGY**

## DRY ICE TECHNOLOGY

Dry ice is known as carbon dioxide in solid form. The term "dry" is related to the ability to sublimate: Dry ice at atmospheric pressure transforms, without liquefaction, directly from a solid to a gas state (sublimation).

### PROPERTIES OF DRY ICE:

- It sublimates residue-free at  $-78,5^{\circ}\text{C}$  ( $= -109,3^{\circ}\text{F}$ )
- It has bacteriostatic properties and displaces oxygen
- It is odorless and tasteless
- It is non-toxic

### A variety of applications:

- Refrigeration of food (catering or food processing)
- Cooling during transport
- Jet cleaning with dry ice pellets
- Refrigeration of pharmaceutical products
- Delivery of samples and freezing applications in laboratories



Block ice machine BJB 150



Dry ice reformer BJU-S

### ADVANTAGES OF THE IN-HOUSE PRODUCTION OF DRY ICE

The in-house production using BUSE dry ice technology is worthwhile whenever dry ice is needed at short notice or in bigger quantities. With an own dry ice machine, the dry ice consumer or dealer can assure his demand always with high-quality dry ice by producing the dry ice at any time, at the right place and in the required quantity.

Storage and transport of dry ice over long distances inevitably leads to sublimation losses. By contrast, liquid  $\text{CO}_2$  can be stored free of losses for on-site production.

During storage and transport the dry ice not only loses weight, but also increasingly quality by condensation of ambient humidity and surface freezing. In certain dry ice applications, e. g. dry ice blasting, the quality of the dry ice considerably determines the result of the application!

## METHODS FOR DRY ICE PRODUCTION

In practice, the production of dry ice occurs by the expansion of liquid CO<sub>2</sub> out of a CO<sub>2</sub> storage tank from a working pressure of approx. 17 bar to atmospheric pressure. Liquid CO<sub>2</sub> is injected into a chamber in which the dry ice snow is collected. Afterwards, a hydraulic press transforms the dry ice snow into dry ice of high density in the form of pellets or blocks. The CO<sub>2</sub> off-gas arising during the production of dry ice can be again liquefied by means of a CO<sub>2</sub>-recovery plant "System BUSE RGW-TEP", if required.



## PRODUCTION OF DRY ICE PELLETS

For various technical applications (e. g. dry ice blasting), the dry ice is needed in form of pellets. Our compact and robust dry ice pelletizers of BUSE series BJP allow production of differently dimensioned pellets. Suitable die selection allows pellet diameters of 3 mm, 10 mm and so-called "nuggets" of 16 mm.

## PRODUCTION OF DRY ICE BLOCKS

BUSE-block ice presses of series BJB produce high-quality dry ice blocks. Dry ice blocks are well suited for being used for transport cooling, in catering and food sectors. The blocks are characterized by especially high density, durability and low sublimation losses.

## DRY ICE REFORMER

By means of the highly productive BJU dry ice reformer, dry ice pellets or small fragments are efficiently pressed to blocks. By using special tools, the reformer additionally provides the possibility of producing special block ice dimensions as well as big production capacities up to 500 kg/h.

## Dry ice in its popular delivery forms with BUSE-dry ice machines



Standard-block  
(Thickness variably adjustable)



Pellets  
diameter 3 mm  
(suitable for dry ice blasting)



Pellets  
diameter 10 mm



Nuggets  
diameter 16 mm

## KEY ADVANTAGES OF BUSE DRY ICE TECHNOLOGY

Basing on the long-term experience of its staff, dry ice engineering can't be imagined without BUSE Gastek. This experience in connection with innovative know-how and new ideas, guarantees an always profitable and economic dry ice production – even for your special requirements.

BUSE dry ice engineering provides

- excellent dry ice quality with high density, hardness and long durability
- very modern, innovative and reliable machine technology
- design, manufacture and assembly in own BUSE workshop in Germany
- strict quality controls in manufacturing and before dispatch



## SYSTEM SOLUTIONS AND PRODUCT RANGE

- Design and delivery of individual machines as well as of complete automatized dry ice production lines according to client's specification
- High-insulating dry ice boxes in different sizes and designs
- CO<sub>2</sub> storage tanks
- Special CO<sub>2</sub> recovery plants for dry ice producers
- BUSE JET dry ice blasting equipment and accessories
- Know-how in application technologies and marketing of dry ice



## CO<sub>2</sub> IS OUR WORLD...

...and has been for over 120 years. The BUSE-position on the beverage and gas-industry is characterized by a close competence chain, that has been earned over 120 years- from a German mineral water producer to a gas producer and distributor, right up to a reputable engineering and service specialist for the gases and beverage industry.

## BUSE – MORE THAN 120 YEARS OF KNOWLEDGE IN CO<sub>2</sub>-TECHNOLOGIES

### BUSE Gastek GmbH & Co. KG

Sprudelstrasse 3  
D-53557 Bad Honningen / Germany  
Tel. +49 2635 781 0  
Fax +49 2635 781 192  
E-Mail: [info@buse-gastek.com](mailto:info@buse-gastek.com)  
[www.buse-gastek.com](http://www.buse-gastek.com)

ISO 9001:2008  
BUREAU VERITAS  
Certification

