

Application

Calzot[®] is used in iron metallurgy as a cost-effective agent for increasing the nitrogen content. Different addition techniques are practiced here:

- Addition when tapping in the ladle
- Injection of Calzot[®] into the molten metal using the lance method or by inserting cored wire

When adding Calzot[®], a total carbon content of approx. 22.5% must be considered ($C_{\text{free}} + C$ from CN_2), which is dissolved in the iron.

The nitrogen discharge depends on the iron quality, the amount introduced and the addition technique.

The following can apply as guide values:

h_N 30 - 50% with addition of pails during tapping

h_N 80 - 100% with injection, pneumatically or as cored wire

Physical properties

Appearance:	Gray-black powder or grain
Behavior against humidity:	Slaking of free lime content
Behavior at increased temperature:	Decomposition under ammonia formation
Decomposition:	> 1000°C
Density:	approx. 2.3 g/cm ³
Bulk weight:	0.9 – 1.1 kg/dm ³

Chemical composition

CaCN ₂	approx. 66%
Other N-compounds	approx. 3%
CaO	approx. 15%
C free	approx. 12%
SiO ₂ + Al ₂ O ₃ + Fe ₂ O ₃	approx. 2%
H ₂ O (550°C)	approx. 0.3%
Residual carbide content	approx. 0.1%
Miscellaneous	< 1%

Formula

CaNCN

Production

Reaction of calcium carbide with nitrogen at 1000 – 1100°C.

Active elements in the iron

N tot.	min. 23.5%
C tot.	approx. 22.5% ($C_{\text{free}} = 12\%$, C from $\text{CN}_2 = 10.5\%$)
Ca	approx. 33%

Technical properties & economic benefits:

- For adding nitrogen to molten metal

Product Management Metallurgy

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Sizing

Type 1:	0 – 2 mm	
Type 2:	1 – 5 mm	(Standard)

Packaging

- 10 kg metal pails on pallet
- 25 kg paper sacks on pallet
- 100 kg or 200 kg drums on pallet

The containers are covered with a protective film. Other packaging sizes and cored wire possible on request.

Shelf life and transport

Calzot[®] must be stored in dry rooms. If stored properly, no deterioration in quality is to be expected in the time periods indicated:

Metal pails / Steel drums: 6 months

Cored wire: up to 12 months

Relevant hazardous substance regulations must be complied with. Our Shipment Handling department can provide further information. The sulfurization agent is not a hazardous substance as defined by transport regulations.

The data in this information sheet corresponds to the current state of our knowledge and is intended to provide information on our products and their potential applications. It is not therefore sufficient to assure certain properties of the products or their suitability for a concrete intended use, and does not contain any complete instructions for use. It also does not represent any guarantee of condition and durability and the user is not exempted from testing the suitability and potential applications for the intended purpose. Any extant intellectual property rights must be taken into account. The Environment and Quality Management of ASK Chemicals Metallurgy GmbH is certified and fulfills the requirements of ISO 14001 and ISO 9001. This information sheet shall cease to be valid if a new version is issued.

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