

SOFNOLIME®

MILITARY DIVING AND SUBMARINE GRADE

DESIGNED TO REMOVE CARBON DIOXIDE
FROM BREATHABLE GAS IN DIVING
REBREATHERS AND SUBMARINES.



APPLICATIONS

Diving grade Sofnolime® absorbs carbon dioxide ensuring a breathable atmosphere is maintained. It is optimised for the removal of carbon dioxide from recirculated air/nitrox/heliox in rebreathers, saturation dive systems and submarines.

- Military rebreathers
- Submarines

PROPERTIES

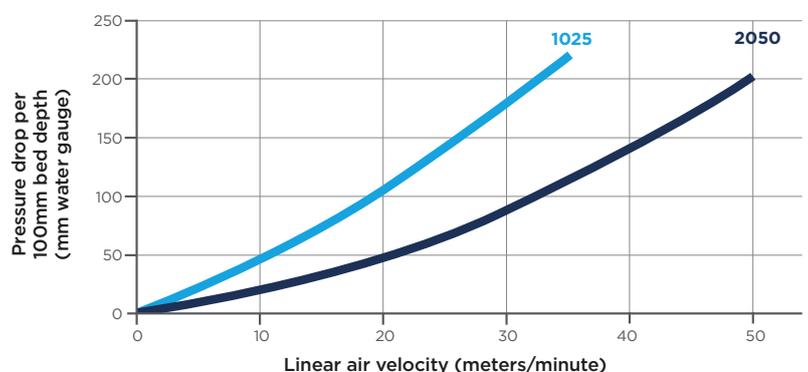
- High intrinsic carbon dioxide capacity
- Available with white to violet pH change indicator
- Irregular shaped/ sized granules for optimum packing
- High attrition resistance (low dust formation)

PRODUCT DETAILS

Three grades are available, D, L and S Grade. The main differences between the three grades are particle size, shape, moisture content and testing regime. L Grade is a 2.0mm to 5.0mm extrudate with a D-shaped cross-section. The D and S Grades have a smaller particle size (1.0mm to 2.5mm) and have a triangular cross-section which combine to give a higher CO₂ usable capacity compared with L Grade. These grades also have differing absorption characteristics under various environmental conditions. S grade is available with a colour indicator (white to violet) D and L grades are non-indicating materials.

TYPICAL PERFORMANCE - PRESSURE DROP

**Air linear velocity - pressure drop relationship
for 'L' and 'D' grade Sofnolime®**



These are typical values and can vary depending on the way the material is packed into the canister

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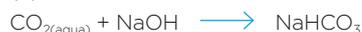
HOW IT WORKS

Sofnolime® removes carbon dioxide (and other acidic contaminants) from gas streams via an exothermic, water facilitated, base catalysed chemical reaction. The Sofnolime® contains a carefully controlled level of water which aids the reaction. Water is also formed as a by-product of the reaction. The reaction proceeds in 3 stages:

(i) Reaction to aqueous layer



(ii) Bicarbonate formation



(iii) Decomposition/regeneration of NaOH catalyst



The overall balanced equation being :-



SPECIFICATIONS

Sofnolime®	1025 (812) D Grade		2050 (4-8) L Grade		1025 S Grade	
	Particle Size	Specification	Particle Size	Specification	Particle Size	Specification
	Greater than 3.0 mm	< 2%	Greater than 7.5 mm	NIL	Greater than 3.0 mm	< 2%
	Between 2.5 & 3.0 mm	< 3 %	Between 7.5 & 5 mm	< 7 %	Between 2.5 & 3.0 mm	< 3 %
	Between 1.0 & 2.5 mm	Balance	Between 1.5 & 5 mm	Balance	Between 1.0 & 2.5 mm	Balance
	Between 0.6 & 1.0 mm	< 4 %	Between 0.6 & 1.5 mm	< 15 %	Between 0.6 and 1.0 mm	< 4 %
	Smaller than 0.6 mm	< 0.5 %	Smaller than 0.6 mm	< 3 %	Smaller than 0.6 mm	< 0.5 %
Moisture		16-20%		16-20 %		16-20%
Hardness		>80%		> 90 %		>80%
Typical Usable Capacity		150 litres/kg		110 litres/kg		150 litres/kg

ADDITIONAL INFORMATION

Pack Size	Grade	Number of packs/ drums on pallet	Net weight of pallet (kg)	Gross weight of pallet (kg)	Dimensions of fully laden pallet, W x D x H (cm)
9.0kg twin pack (2x4.5kg)	L & D	60	540	625	120 x 100 x 105
20kg keg	L, D & S	32	640	705	120 x 100 x 95
20kg metal drum	S	24	480	553	120 x 100 x 98
50kg metal drum	S	8	400	489	120 x 100 x 84

Quality

Molecular Products Ltd's aim is to manufacture chemical products which satisfy completely the needs of our customers. All products are rigorously tested to ensure conformance to the specification. Our activities comply to the requirements of ISO 9001 and ISO 13485.

Sofnolime® D and L grades, without indicator, pass testing based on NATO standard STANAG 1411.

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