

¹⁷O in the form of gas and water for magnetic resonance imaging (MRI) and scientific applications



Nuclear magnetic resonance (NMR) technology is accelerating a revolution in medical imaging.

NMR technology based on Oxygen-17 uses the magnetic properties of atomic nuclei that occur naturally in the body.

Oxygen-17 (¹⁷O) is now used for diagnostic applications and medical research to create a new generation of NMR Images.

New developments with ¹⁷O enrich the quality of information about living tissue to enhance the practice of medicine in the fields of cardiology and neurology among others.



Our Oxygen-17 products are manufactured in accordance with cGMP regulations and with the requirements of 21 Code of Federal Regulations: PARTS 210 and 211.

NUKEM Isotopes GmbH

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Oxygen-17 in the form of gas

Specification

Physical and chemical properties:

- Material ^{17}O in the form of gas.
- Enrichment $^{17}\text{O} \geq 70\text{at}\%$
- Purity $> 99.9\%$
- Volume 5L, 10L and 20L with a CGA 540 valve.
1L and 2L with a 1/4" NPT valve

Impurities in vppm

CO	≤ 10
CO ₂	≤ 100
H ₂	≤ 50
N ₂	≤ 500

Oxygen-17 in the form of water

Specification

Physical and chemical properties:

- Material ^{17}O in the form of water.
- Enrichment $^{17}\text{O} \geq 10\text{at}\%$
 $^{17}\text{O} \geq 20\text{at}\%$
 $^{17}\text{O} \geq 40\text{at}\%$
 $^{17}\text{O} \geq 50\text{at}\%$
 $^{17}\text{O} \geq 60\text{at}\%$
 $^{17}\text{O} \geq 70\text{at}\%$
 $^{17}\text{O} \geq 90\text{at}\%$
- Purity $\geq 99.9\%$
- pH 5,5 - 8

Impurities in µg/g

Al	$\leq 0,05^*$
Br	$\leq 0,5^*$
Ca	$\leq 0,1^*$
Cl	$\leq 0,5^*$

Impurities in µg/g

Co, Cr, Cu	$\leq 0,01^*$
F	$\leq 0,05^*$
Fe	$\leq 0,01^*$
K	$\leq 0,1^*$
Mg	$\leq 0,05^*$
Mn	$\leq 0,01^*$
Na	$\leq 1^*$
Ni	$\leq 0,01^*$
NO ₂	$\leq 0,1^*$
NO ₃	$\leq 0,05^*$
Si	$\leq 1^*$
SO ₄	$\leq 0,1^*$
Pb	$\leq 0,01^*$
PO ₄	$\leq 0,05^*$
Zn	$\leq 0,05^*$

* applicable for 10at% enriched and 20at% enriched ^{17}O water only!

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