

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 Imaging GmbH

Industriestrasse 13, 63755 Alzenau, Germany, T: +49 (0)6023 911611, F: +49 (0)6023 911614
E: info@nukemisotopes.de, I: www.nukem-isotopes.com

Oxygen-17 in the form of gas

Specification

Physical and chemical properties:

- Material ^{17}O in the form of gas.
- Enrichment $^{17}\text{O} > 70\text{at}\%$
- Purity $> 99.9\%$
- Volume Available in volumes of 5 L, 10 L and 20 L with a CGA 540 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 $^{17}\text{O} > 10\text{at}\%$
 $^{17}\text{O} > 20\text{at}\%$
 $^{17}\text{O} > 40\text{at}\%$
 $^{17}\text{O} > 50\text{at}\%$
 $^{17}\text{O} > 60\text{at}\%$
 $^{17}\text{O} > 70\text{at}\%$
 $^{17}\text{O} > 90\text{at}\%$
- Purity $> 99.9\%$
- pH 6 - 8

Impurities in $\mu\text{g/g}$

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

Impurities in $\mu\text{g/g}$

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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