

	PGNiG SA w Warszawie Oddział w Odolanowie			Edition: 06
	ISO 9001	ISO 14001	ISO 45001	Valid from: 16.08.2023
	<b>SPECIFICATION OF GASEOUS HELIUM 4.0</b>			Document No: SP-Z-4-1

#### 1. PURITY:

Min. 99,99 % of helium

#### 2. IMPURITIES:

Less than 0,01%

#### 3. CYLINDERS AND BUNDLES TYPES WITH QUANTITY OF HELIUM FILLED:

Vessel:	Volume (l):	Nominal working pressure 150 bar	Nominal working pressure 200 bar	Nominal working pressure 300 bar
		Quantity filled (m <sup>3</sup> )		
Steel cylinder	50	6,9	9,0	13,0
Steel cylinder	40	5,6	7,2	10,4
Steel cylinder	27	3,8	4,9	7,0
Steel cylinder	20	2,8	3,6	5,2
Steel cylinder	15	2,1	2,7	3,9
Steel cylinder	10	1,4	1,8	2,6
Steel cylinder	8	1,1	1,4	2,1
Steel cylinder	5	0,7	0,9	1,3
Bundle	15x50	104,2	135,7	195,1
Bundle	12x50	83,4	108,6	156

\* Quantity of helium in m<sup>3</sup> calculated taking into account compressibility factory conditions.  
Pressure of filling helium into cylinder is corrected to temperature 15 °C.  
Based on the CGA P-77-2018 Standard (Standard for the Filling of Non-flammable Compressed Gas Cylinders), a cylinder filling tolerance range of ±3% of the nominal working pressure is assumed.

#### 4. MARKING:

##### Cylinder:

Cylindrical part of the cylinder: grey  
Cylinder cap: brown RAL 8008  
Letter "N": white, black or blue on double cylinder cap  
Label: "Gaseous Helium 4.0"

##### Bundle:

Colour: grey  
Label: "Gaseous Helium 4.0"

#### 5. CONNECTIONS:

For nominal pressure 150/200 bar: W21,8x 1/14" by DIN 477-1 No 6  
For nominal pressure 300 bar: W30 x 2 by DIN 477-5 No 54

#### 6. SAFETY DATA:

UN No: 1046  
Shipping name: HELIUM COMPRESSED  
Hazard Class: 2 (Classification code 1A, label 2.2, hazard identification number 20)