

Muñoz Fernando



Fecha de Calibración: 22/4/2021

Fecha de Emisión: 22/4/2021

CERTIFICADO DE CALIBRACION N°: 164871



Service

COMPAÑÍA MSA DE ARGENTINA  
S.A.  
Avda. Belgrano 2470

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4727-4500  
info.ar@msasafety.com

Cliente:	No Asignado	Equipo en uso:	CALIBRADO
Instrumento:	Altair 4x BT Grupo: 8 - (Portable Instrument)	Equipo nuevo:	SI
S/N:	E0-00177033-L20	Fabricante:	Mine Safety Appliances Company

Gas Patrón	Objetivo a Verificar	Incert. del Gas	Número de Lote	Mediciones			Incert. de la Medición	Rango
				1	2	3		
Acido Sulfhidrico (H2S) 20 ppm	20 ppm	10	245755	20	20	20	2,0817 ppm	0 - 200 ppm
Metano (CH4) 1,45 %	58 %	5	245755	58	58	58	2,9569 %	0 - 100 %
Monóxido de Carbono (CO) 60 ppm	60 ppm	5	245755	60	60	60	3,0551 ppm	0 - 2000 ppm
Oxígeno (O2) 15 %	15 %	5	245755	15	15	15	0,9465 %	0 - 30 %

**Calibración:** Contraste con gas patrón trazable a patrones de peso NIST

**Condiciones ambientales de Calibración:** (B1611DVQ) Don Torcuato - Buenos Aires

Temperatura (°C) 22°C  
Presión atmosférica (hPa): 1012 hPa  
Humedad (%): 68 %

**Procedimientos de Calibración:** De acuerdo al manual de cada equipo

(\*) Las especificaciones de tolerancia de medición se encuentran informadas en el manual del equipo.

**Límites en el uso:** Indicados en el manual del equipo

Los resultados son válidos solamente para el equipo ensayado no siendo extensivos a cualquier otro.  
La trazabilidad de los detectores MSA se realiza a través del número de serie

La reproducción de este documento sólo podrá hacerse íntegramente sin ninguna alteración.

Cantidad de hojas: 1  
COD : FOR-SET-03

Tec. German Almonio  
SERVICIO TÉCNICO  
COMPAÑÍA MSA DE ARGENTINA S.A.

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# CERTIFICATE OF ANALYSIS

**PORTAGAS**  
by Linde

ISO 9001:2015 CERTIFIED  
ISO 17034:2016 ACCREDITED  
ISO/IEC 17025:2017 ACCREDITED

1202 E Sam Houston Parkway S  
Pasadena, TX 77503  
Phone: (800) 548 2268 Fax: (713) 928 9961

PO Number: 4502818425

Manufactured For:  
MSA Safety Sales, LLC  
1000 Cranberry Woods Drive  
Cranberry Township PA 16066  
United States Of America

Work Order No: 34548500  
Certification Date: 10-Dec-2020

Customer Part No: 10045035

Cylinder Size: 58DALS

Cylinder Type: ISO 7866

Cylinder Content: 58 L (2 CU.FT.) @ 70 F (21 C) & 500 PSIG (3445Kpag)

Cylinder Lot No: 245755; 134 of 476 cylinders

Cylinder Serial Nos: BC322094,BC322124,BC322211,BC341006,BC341009,BC341011,BC341025,BC341028,BC341037,BC341040,BC341049,BC341050,BC341053,BC341054,BC341064,BC341068,BC341083,BC341092,BC341093,BC341098,BC341102,BC341107,BC341109,BC341111,BC341114,BC341120,BC341121,BC341546,BC341547,BC341549,BC341550,BC341552,BC341560,BC341562,BC341564,BC341572,BC341584,BC341586,BC341594,BC341595,BC341599,BC341602,BC341622,BC341642,BC341667,BC341669,BC341670,BC341675,BC341683,BC341684,BC341720,BC341721,BC341726,BC341731,BC341734,BC341738,BC341740,BC341744,BC341747,BC341750,BC341753,BC341761,BC341762,BC341766,BC341767,BC341776,BC341781,BC341782,BC341899,BC341904,BC342056,BC342079,BC342087,BC342088,BC342091,BC342092,BC342705,BC342708,BC342715,BC342719,BC342739,BC342742,BC342750,BC342762,BC342771,BC342784,BC342789,BC342791,BC342796,BC342807,BC342808,BC342811,BC342813,BC342819,BC342833,BC342835,BC342840,BC342842,BC342843,BC342853,BC342854,BC342860,BC342861,BC342862,BC342863,BC342865,BC342867,BC342879,BC342881,BC342893,BC342894,BC342896,BC342899,BC342900,BC342903,BC342904,BC342907,BC342911,BC342914,BC342917,BC342918,BC342919,BC342920,BC342922,BC342924,BC342930,BC342931,BC342932,BC342933,BC342947,BC342949,BC342950,BC342961,BC342962

Expiration Date: Dec 2022

Component	Nominal	Accuracy	Analytical Method
HYDROGEN SULFIDE	20 PPM (vol)	+/- 10%	Automated Electrochemical Sensor
CARBON MONOXIDE	60 PPM (vol)	+/- 5%	Horiba CO Analyzer VIA-510_97KP6EHE
PENTANE EQUIVALENT 58% LEL	(METHANE 1.45% vol)	+/- 5%	Mocon 9000 THC_0317DN0931
OXYGEN	15%(vol)	+/- 5%	Teledyne 3000M Series Oxygen Analyzer
NITROGEN	BALANCE		

The mixture was manufactured or transfilled from a standard which has been gravimetrically blended with traceability through NIST to the International System of Units (SI) balance. Balances are calibrated by a certified third party with certified NIST weights and NIST test numbers. NIST Number: BU70910-041220. The uncertainty is expressed as an expanded uncertainty  $U=kuc$  with  $uc$  determined by experiment and a coverage factor  $k=2$ . The certified value  $\pm U$  is presented with a level of confidence of approximately 95%.



Quality Assurance Manager