



For Immediate Release

Contact: Alexandria Trusov

Atrusov@alpharesources.com

Certified Reference Materials Releases for Q2 2022

Stevensville, Michigan, July 12, 2022 – Alpha Resources LLC, the largest manufacturer of aftermarket consumables and reference materials, is pleased to announce the following certified reference materials have been released in Q2 of 2022.

New Q2 2022 available Organic Reference Materials include:

- AR1702 | Lot 702322 (0.75%±0.03% Coal CRM)
- AR1726 | Lot 726622 (Proximate Coal CRM)
- AR1730 | Lot 730522 (Proximate Coal CRM)
- AR1946 | Lot 321F, Wood Biomass CRM
- AR1947 | Lot 521P, Switchgrass Biomass CRM
- AR2044 | Lot 044422 | (0.41%±0.02% Sulfur in Crude CRM)
- AR2048 | Lot 048322 | (2.11%±0.09% Sulfur in Crude CRM)
- AR2781 | Lot 781222 (Ultimate Coal CRM)
- AR2782 | Lot 782522 (Ultimate Coal CRM)
- AR3506 | Lot 506322 (0.50%±0.03% Sulfur and 1.00%±0.05% Chlorine in Lube CRM)

Among the organic certified reference materials released in Q2, the Switchgrass Biomass is a new offering.

New Q2 2022 available Inorganic Certified Reference Materials include:

AR 146 | OXYGEN & SULFUR IN COPPER PIN CRM | LOT #921H

% OXYGEN	% SULFUR
MEAN = 0.0238	MEAN = 0.0013
Standard Deviation = ± 0.0003	Standard Deviation = ± 0.0002
Expanded Uncertainty = ± 0.0007	Expanded Uncertainty = ± 0.0005
(k=2, @ 95% confidence) (n=40)	(k=2, @ 95% confidence) (n=34)



AR 588 | TITANIUM CRM | LOT #121B

% CARBON	% HYDROGEN
MEAN = 0.008	MEAN = 0.0149
Standard Deviation = \pm 0.001	Standard Deviation = \pm 0.0003
Expanded Uncertainty = \pm 0.0093	Expanded Uncertainty = \pm 0.0006
(k=2, @ 95% confidence) (n=64)	(k=2, @ 95% confidence) (n=40)

AR 641 | TITANIUM O/H/N CRM | Lot #1021L

% OXYGEN	% NITROGEN	% HYDROGEN
MEAN = 0.179	MEAN = 0.0272	MEAN = 0.0003
Standard Deviation = \pm 0.003	Standard Deviation = \pm 0.0018	Standard Deviation = \pm 0.0001
Expanded Uncertainty = \pm 0.008	Expanded Uncertainty = \pm 0.0039	Expanded Uncertainty = \pm 0.0002
(k=2, @ 95% confidence) (n=35)	(k=2, @ 95% confidence) (n=34)	(k=2, @ 95% confidence) (n=36)

AR 648 | TITANIUM O/H/N CRM | Lot #721Y

% OXYGEN	% NITROGEN	% HYDROGEN
MEAN = 0.119	MEAN = 0.0058	MEAN = 0.0169
Standard Deviation = \pm 0.004	Standard Deviation = \pm 0.0010	Standard Deviation = \pm 0.0004
Expanded Uncertainty = \pm 0.008	Expanded Uncertainty = \pm 0.0021	Expanded Uncertainty = \pm 0.0010
(k=2, @ 95% confidence) (n=58)	(k=2, @ 95% confidence) (n=58)	(k=2, @ 95% confidence) (n=37)



AR 872 | LOW CARBON STEEL RING CRM | LOT #1221T

% CARBON	% SULFUR
MEAN = 0.172	MEAN = 0.0082
Standard Deviation = ± 0.002	Standard Deviation = ± 0.0006
Expanded Uncertainty = ± 0.005	Expanded Uncertainty = ± 0.0014
(k=2, @ 95% confidence) (n=37)	(k=2, @ 95% confidence) (n=35)

AR 895 | CARBON STEEL PIN CRM | LOT #621V

% CARBON	% SULFUR
MEAN = 0.274	MEAN = 0.0216
Standard Deviation = ± 0.002	Standard Deviation = ± 0.0007
Expanded Uncertainty = ± 0.004	Expanded Uncertainty = ± 0.0018
(k=2, @ 95% confidence) (n=36)	(k=2, @ 95% confidence) (n=37)

AR 948 | CARBON STEEL CHIP CRM | Lot #821A

% CARBON	% SULFUR	% NITROGEN
MEAN = 0.492	MEAN = 0.079	MEAN = 0.0093
Standard Deviation = ± 0.003	Standard Deviation = ± 0.001	Standard Deviation = ± 0.0004
Expanded Uncertainty = ± 0.008	Expanded Uncertainty = ± 0.002	Expanded Uncertainty = ± 0.0012
(k=2, @ 95% confidence) (n=39)	(k=2, @ 95% confidence) (n=39)	(k=2, @ 95% confidence) (n=40)

AR 4011 | CARBON AND SULFUR IN LIMESTONE PIN CRM | LOT #621Q

% CARBON	% SULFUR
MEAN = 8.91	MEAN = 0.029
Standard Deviation = ± 0.31	Standard Deviation = ± 0.029
Expanded Uncertainty = ± 0.0007	Expanded Uncertainty = ± 0.010
(k=2, @ 95% confidence) (n=35)	(k=2, @ 95% confidence) (n=53)

A complete list of Alpha Resources certified reference materials maybe found online at: <https://www.alpharesources.com/current-list-of-standards.php>



Value Beyond Measure

About Alpha Resources

Founded in 1978, Alpha Resources, LLC is a global leader in the manufacture and distribution of consumables and creation of certified reference materials for use in elemental combustion analysis, and is ISO17034, ISO17025, ISO9001:2015 certified.