ALPHA RESOURCES LLC

Value Beyond Measure

For Immediate Release
Contact: Alexandria Trusov
Atrusov@alpharesources.com

Certified Reference Materials Releases for Q1 2022

Stevensville, Michigan, April 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 Q1 of 2022.

New Q1 2022 available Organic Reference Materials include:
- AR742B | Lot 742721 (Green Pet Coke CRM) Proximate analysis
- AR1682 | Lot 821021 (0.034%±0.004% Coal CRM) Ultra-low sulfur in coal
- AR1726 | Lot 726122 (Proximate Coal CRM)
- AR2018 | Lot 421H (Alfalfa CRM)
- AR2932 | Lot 321221 (0.053%±0.004% Lube Oil CRM)
- AR4107 | Lot 419C (19.37%±0.26% Loss on Ignition CRM)

New Q1 2022 available Inorganic Certified Reference Materials include:

AR 323 | CAST IRON CRM | LOT #921E

% CARBON	% SULFUR
MEAN = 3.89	MEAN = 0.083
Standard Deviation = ± 0.04	Standard Deviation = ± 0.03
Expanded Uncertainty = ± 0.08	Expanded Uncertainty = ± 0.007
(k=2, @ 95% confidence) (n=39)	(k=2, @ 95% confidence) (n=39)

AR 594 TITANIUM CRM | LOT #220K

% CARBON	% HYDROGEN
MEAN = 0.020	MEAN = 0.0003
Standard Deviation = ± 0.001	Standard Deviation = ± 0.0001
Expanded Uncertainty = ± 0.003	Expanded Uncertainty = ± 0.0002
(k=2, @ 95% confidence) (n=30)	(k=2, @ 95% confidence) (n=38)

AR 642 | TITANIUM O\H\N CRM | Lot #521N

% OXYGEN	% NITROGEN	% HYDROGEN
MEAN = 0.151	MEAN = 0.0182	MEAN = 0.0052
Standard Deviation = ± 0.005	Standard Deviation = ± 0.0014	Standard Deviation = ± 0.0005
Expanded Uncertainty = ± 0.010	Expanded Uncertainty = ± 0.0030	Expanded Uncertainty = ± 0.0011
(k=2, @ 95% confidence) (n=69)	(k=2, @ 95% confidence) (n=50)	(k=2, @ 95% confidence) (n=46)

AR 649 | TITANIUM O\H\N CRM | Lot #621T

% OXYGEN	% NITROGEN	% HYDROGEN
MEAN = 0.125	MEAN = 0.0065	MEAN = 0.0197
Standard Deviation = ± 0.009	Standard Deviation = ± 0.0006	Standard Deviation = ± 0.0007
Expanded Uncertainty = ± 0.018	Expanded Uncertainty = ± 0.0012	Expanded Uncertainty = ± 0.0017
(k=2, @ 95% confidence) (n=51)	(k=2, @ 95% confidence) (n=53)	(k=2, @ 95% confidence) (n=33)

AR 651 | TITANIUM O\H\N CRM | Lot #621R

% OXYGEN	% NITROGEN	% HYDROGEN
MEAN = 0.130	MEAN = 0.0071	MEAN = 0.0022
Standard Deviation = ± 0.004	Standard Deviation = ± 0.0007	Standard Deviation = ± 0.0002
Expanded Uncertainty = ± 0.009	Expanded Uncertainty = ± 0.0015	Expanded Uncertainty = ± 0.0005
(k=2, @ 95% confidence) (n=37)	(k=2, @ 95% confidence) (n=37)	(k=2, @ 95% confidence) (n=36)

AR 896 HIGH SULFUR CARBON STEEL PIN CRM | LOT #1021N

% CARBON	% SULFUR
MEAN = 0.165	MEAN = 0.087
Standard Deviation = ± 0.002	Standard Deviation = ± 0.001
Expanded Uncertainty = ± 0.004	Expanded Uncertainty = ± 0.003
(k=2, @ 95% confidence) (n=34)	(k=2, @ 95% confidence) (n=34)

AR 953 | TOOL STEEL CHIP CRM | Lot #421G

% CARBON	% SULFUR	% NITROGEN
MEAN = 0.948	MEAN = 0.0010	MEAN = 0.0044
Standard Deviation = ± 0.005	Standard Deviation = ± 0.0002	Standard Deviation = ± 0.0004
Expanded Uncertainty = ± 0.012	Expanded Uncertainty = ± 0.0005	Expanded Uncertainty = ± 0.0008
(k=2, @ 95% confidence) (n=60)	(k=2, @ 95% confidence) (n=54)	(k=2, @ 95% confidence) (n=37)

AR 1651| OXYGEN & NITROGEN STEEL PIN CRM | LOT #921G

% OXYGEN	% NITROGEN
MEAN = 0.0036	MEAN = 0.0228
Standard Deviation = ± 0.0002	Standard Deviation = ± 0.0009
Expanded Uncertainty = ± 0.0005	Expanded Uncertainty = ± 0.0020
(k=2, @ 95% confidence) (n=43)	(k=2, @ 95% confidence) (n=49)

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

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 atomic spectroscopy analysis, and is ISO17034, ISO17025, ISO9001:2015 certified.