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**RD94 CERTIFICATE OF ACCEPTED REFERENCE VALUE  
 AS DETERMINED GRAVIMETRICALLY & ANALYTICALLY**



ISO 17034 Accredited  
 A2LA Certificate Number: 4903.01

**D4815 OXYGENATE CALIBRATION SET MIXTURES 1-11**

Spectrum Quality Standards

ISSUED BY: Spectrum Quality Standards, Ltd.  
 LOT #: RN043021AAKK SET LOT#: RN043021AAKK  
 Analytical Uncertainty: +/- 1% Internal Standard was added in accordance with EPA and ASTM Methods.

Supplied To: **SAO VIET TECHNOLOGIES CO., LTD**  
**HO CHI MINH CITY, VIETNAM**

ASTM Reference: D4815/D5599 SQS Part Number: 4815CAL/5599CAL  
 Issue Date: 04-22-2022 Expiration Date: 04/2023

MIX #1 COMPONENTS (PURITY)	CONCENTRATION		GRAMS
	[WT. %]	[% LV.]	
METHANOL (99.89%)	1.26	1.17	3.965
ETHANOL (99.95%)	1.26	1.18	3.968
MTBE (99.99%)	18.20	18.27	57.09
ETBE (99.50%)	4.99	4.98	15.67
N-BUTYL ALCOHOL (99.91%)	0.263	0.241	0.825
ISOPROPYL ALCOHOL (99.97%)	0.526	0.498	1.650
N-PROPYL ALCOHOL (99.90%)	0.263	0.243	0.824
ISO-BUTANOL (100%)	0.263	0.243	0.824
TERT AMYL ALCOHOL (99.50%)	0.263	0.243	0.826
DME (99.89%)	5.00	4.31	16.51

MIX #2 COMPONENTS (PURITY)	CONCENTRATION		GRAMS
	[WT. %]	[% LV.]	
METHANOL (99.89%)	4.99	4.70	15.68
ETHANOL (99.95%)	0.263	0.249	0.826
T-BUTANOL (99.70%)	9.04	8.75	28.38
MTBE (99.99%)	4.99	5.06	15.67
N-BUTYL ALCOHOL (99.91%)	0.526	0.486	1.650
DIISOPROPYL ETHER (99.60%)	0.263	0.273	0.825
ISOPROPYL ALCOHOL (99.97%)	0.263	0.252	0.826
N-PROPYL ALCOHOL (99.90%)	0.526	0.491	1.650
ISO-BUTANOL (100%)	0.526	0.491	1.649
SEC-BUTANOL (99.77%)	2.52	2.34	7.921
TERT AMYL ALCOHOL (99.50%)	1.52	1.42	4.786
DME (99.89%)	5.00	4.35	16.51

MIX #3 COMPONENTS (PURITY)	CONCENTRATION		GRAMS
	[WT. %]	[% LV.]	
METHANOL (99.89%)	9.04	8.50	28.37
T-BUTANOL (99.70%)	5.05	4.87	15.85
ETBE (99.50%)	9.04	9.08	28.38
TAME (98.60%)	1.26	1.22	3.963
TERT AMYL ALCOHOL (99.50%)	0.789	0.733	2.474
DME (99.89%)	4.99	4.34	16.51

MIX #4 COMPONENTS (PURITY)	CONCENTRATION		GRAMS
	[WT. %]	[% LV.]	
METHANOL (99.89%)	0.526	0.491	1.649
ETHANOL (99.95%)	4.99	4.67	15.67
MTBE (99.99%)	1.05	1.05	3.302
ETBE (99.50%)	15.14	15.11	47.52
DIISOPROPYL ETHER (99.60%)	3.57	3.67	11.22
DME (99.89%)	4.99	4.31	16.51

MIX #5 COMPONENTS (PURITY)	CONCENTRATION		GRAMS
	[WT. %]	[% LV.]	
ETHANOL (99.95%)	9.57	8.99	30.04
T-BUTANOL (99.70%)	0.506	0.487	1.586
MTBE (99.99%)	10.04	10.12	31.51
ETBE (99.50%)	1.26	1.26	3.970
TAME (98.60%)	0.505	0.489	1.584
DIISOPROPYL ETHER (99.60%)	1.48	1.52	4.651
SEC-BUTANOL (99.77%)	0.260	0.240	0.816
DME (99.89%)	5.00	4.33	16.51

MIX #6 COMPONENTS (PURITY)	CONCENTRATION		GRAMS
	[WT. %]	[% LV.]	
METHANOL (99.89%)	15.79	14.86	49.52
MTBE (99.99%)	7.36	7.46	23.09
ISOPROPYL ALCOHOL (99.97%)	2.63	2.51	8.257
DME (99.89%)	4.99	4.35	16.50

MIX #7 COMPONENTS (PURITY)	CONCENTRATION		GRAMS
	[WT. %]	[% LV.]	
ETHANOL (99.95%)	15.86	15.03	49.82
TAME (98.60%)	10.04	9.79	31.52
DME (99.89%)	4.99	4.36	16.50

MIX #8 COMPONENTS (PURITY)	CONCENTRATION		GRAMS
	[WT. %]	[% LV.]	
T-BUTANOL (99.70%)	14.71	14.27	46.20
N-BUTYL ALCOHOL (99.91%)	1.31	1.21	4.126
TAME (98.60%)	7.94	7.74	24.93
ISOPROPYL ALCOHOL (99.97%)	1.57	1.51	4.958
N-PROPYL ALCOHOL (99.90%)	2.62	2.45	8.251
DME (99.89%)	4.99	4.35	16.50

MIX #9 COMPONENTS (PURITY)	CONCENTRATION		GRAMS
	[WT. %]	[% LV.]	
TAME (98.60%)	14.65	14.29	46.04
DIISOPROPYL ETHER (99.60%)	0.504	0.524	1.585
N-BUTYL ALCOHOL (99.91%)	4.88	4.53	15.35
N-PROPYL ALCOHOL (99.90%)	1.52	1.42	4.795
ISO-BUTANOL (100%)	2.52	2.36	7.920
SEC-BUTANOL (99.77%)	0.499	0.465	1.567
TERT AMYL ALCOHOL (99.50%)	0.499	0.467	1.568
DME (99.89%)	4.99	4.36	16.51

MIX #10 COMPONENTS (PURITY)	CONCENTRATION		GRAMS
	[WT. %]	[% LV.]	
ETBE (99.50%)	12.62	12.67	39.60
ISOPROPYL ALCOHOL (99.97%)	5.25	5.01	16.49
N-PROPYL ALCOHOL (99.90%)	5.26	4.89	16.50
ISO-BUTANOL (100%)	1.58	1.47	4.960
SEC-BUTANOL (99.77%)	1.58	1.46	4.958
DME (99.89%)	4.99	4.34	16.51

MIX #11 COMPONENTS (PURITY)	CONCENTRATION		GRAMS
	[WT. %]	[% LV.]	
T-BUTANOL (99.70%)	1.31	1.27	4.137
DIISOPROPYL ETHER (99.60%)	4.99	5.17	15.67
N-BUTYL ALCOHOL (99.91%)	2.63	2.43	8.252
ISO-BUTANOL (100%)	5.00	4.66	15.69
SEC-BUTANOL (99.77%)	4.99	4.63	15.67
TERT AMYL ALCOHOL (99.50%)	2.63	2.45	8.258
DME (99.89%)	4.99	4.34	16.50

**BALANCE: RFA GASOLINE [grams]**

MIX 1	227.87	MIX 2	233.65	MIX 3	234.46
MIX 4	234.14	MIX 5	239.36	MIX 6	232.66
MIX 7	232.16	MIX 8	225.06	MIX 9	234.69
MIX 10	231.01	MIX 11	245.86		

\*Grams were calculated by taking the grams added in mixture and multiplied by the purity.

Materials must be stored at a temperature between 20 °F and 90 °F.  
 Follow all handling and storage instructions.  
 All designated PPE listed on the product label must be used.  
 All designated PPE as stated by ASTM in the method must be used.  
 Material is intended for single use and is in a quantity sufficient to the intended method except when provided in quantities of 2 oz., 4 oz., and larger containers.  
 Material is intended for use by the above listed method.

APPROVED SIGNATORY: \_\_\_\_\_

CEO of SQS, Gary Lew

NIST TRACEABLE BY WEIGHT - WEIGHT SET 005 - CAL LAB CERT# 476401-1 and 1346502 inspections and adjustments are performed in accordance to Aliometrics, an A2LA accredited company, work instruction 5-4W/03 in compliance with ISO/IEC 17025, ANSI/NCSL Z540-1 and the principles of ISO 9001:2015. For Safety, Storage, Handling, Chemical Data and Hazardous Information, please consult the SDS associated with this item. This item for laboratory analysis only; proper handling and safety procedures must be followed at all times.