Certificate of Analysis

SUPELCO 37 COMPONENT FAME MIX

Certified Reference Material

Description

Product ID CRM47885
Lot **LRAC6213**
Expiration Date June 2023
Manufacturing Date June 2020
Storage Conditions Freeze
Solvent/Matrix METHYLENE CHLORIDE

Certified Values

Analyte	*Certified Value* [1,4]	*Units*	*Raw Material Purity,%*	*Elution order*	*Raw Material Lot*	
Methyl butyrate (C4:0)	401 ± 11	µg/mL	99.9	01	MKCF9233	623-42-7
Methyl hexanoate (C6:0)	401 ± 11	µg/mL	99.9	02	MKBZ3038V	106-70-7
Methyl octanoate (C8:0)	401 ± 11	µg/mL	99.9	03	LC13561	111-11-5
Methyl decanoate (C10:0)	401 ± 20	µg/mL	99.1	04	MKCF2493	110-42-9
Methyl undecanoate (C11:0)	200 ± 11	µg/mL	99.0	05	BCBN7141V	1731-86-8
Methyl laurate (C12:0)	401 ± 22	µg/mL	98.8	06	BCBP3445V	111-82-0
Methyl tridecanoate (C13:0)	200 ± 11	µg/mL	99.5	07	BCBV4347	1731-88-0
Methyl myristate (C14:0)	401 ± 21	µg/mL	100.0	08	LC17239	124-10-7
Methyl myristoleate (C14:1)	200 ± 11	µg/mL	99.0	09	U-36M-F28-C	56219-06-8
Methyl pentadecanoate (C15:0)	200 ± 9	µg/mL	99.7	10	BCBR2231V	7132-64-1
Methyl cis-10 pentadecenoate (C15:1)	200 ± 9	µg/mL	99.0	11	U-38M-JA22-D	90176-52-6
Methyl palmitate (C16:0)	601 ± 26	µg/mL	99.0	12	LC17089	112-39-0
Methyl palmitoleate (C16:1)	200 ± 9	µg/mL	100.0	13	U-40M-N13-D	1120-25-8
Methyl heptadecanoate (C17:0)	200 ± 9	µg/mL	96.4	14	BCBR1790V	1731-92-6
Methyl cis-10 heptadecenoate (C17:1)	200 ± 9	µg/mL	100.0	15	SLCG2846	75190-82-8
Methyl stearate (C18:0)	401 ± 19	µg/mL	99.7	16	BCBV9185	112-61-8
Methyl trans-9 eladiate (C18:1)	200 ± 10	µg/mL	100.0	17	SLBZ7823	1937-62-8
Methyl cis-9 oleate (C18:1)	401 ± 19	µg/mL	99.6	18	MKCJ0804	112-62-9
Methyl linolelaidate (C18:2)	200 ± 12	µg/mL	99.0	19	U-60M-JA13-E	2566-97-4
Methyl linoleate (C18:2)	200 ± 13	µg/mL	99.0	20	BCCB2464	112-63-0
Methyl arachidiate (C20:0)	401 ± 22	µg/mL	100.0	21	QISZI-AH	1120-28-1
Methyl-gamma-linolenate (C18:3)	200 ± 17	µg/mL	99.0	22	MKCJ3604	16326-32-2

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Methyl cis-11-eicosanoate (C20:1)	200 ± 11	µg/mL	99.0	23	MKCJ2391	2390-09-2
Methyl linolenate (C18:3)	200 ± 18	µg/mL	99.0	24	SLBZ9269	301-00-8
Methyl heneicosanoate (C21:0)	200 ± 11	µg/mL	99.6	25	LC08970	6064-90-0
Methyl cis-11,14-eicosadienoate (C20:2)	200 ± 15	µg/mL	99.9	26	U-68M-A4-D	61012-46-2
Methyl behenate (C22:0)	401 ± 24	µg/mL	99.0	27	N-22M-JA23-E	929-77-1
Methyl cis-8, 11, 14-eicosatrienoate (C20:3)	200 ± 20	µg/mL	99.0	28	U-69M-N30-C	21061-10-9
Methyl erucate (C22:1)	200 ± 12	µg/mL	99.4	29	BCBX7574	1120-34-9
Methyl cis-11, 14, 17-eicosatrienoate (C20:3)	200 ± 20	µg/mL	100.0	30	U-70M-S20-C	55682-88-7
Methyl tricosanoate (C23:0)	201 ± 13	µg/mL	99.6	31	SLBZ1076	2433-97-8
Methyl cis-5, 8, 11, 14-eicosatetraenoate (C20:4)	200 ± 24	µg/mL	99.9	32	LC15184	2566-89-4
Methyl cis-13, 16-docosadienoate (C22:2)	200 ± 16	µg/mL	99.0	33	U-81-M	61012-47-3
Methyl lignocerate (C24:0)	401 ± 27	µg/mL	100.0	34	SLCC4462	2442-49-1
Methyl cis-5, 8, 11, 14, 17-eicosapentaenoate (C20:5)	200 ± 31	µg/mL	99.9	35	U-99M-JY30-C	2734-47-6
Methyl nervonate (C24:1)	200 ± 14	µg/mL	99.0	36	U-88M-A16-E	2733-88-2
Methyl cis-4, 7, 10, 13, 16, 19-docosahexaenoate (C22:6)	200 ± 41	µg/mL	99.7	37	U-84M-017-C	2566-90-7

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Lot	**LRAC6213**
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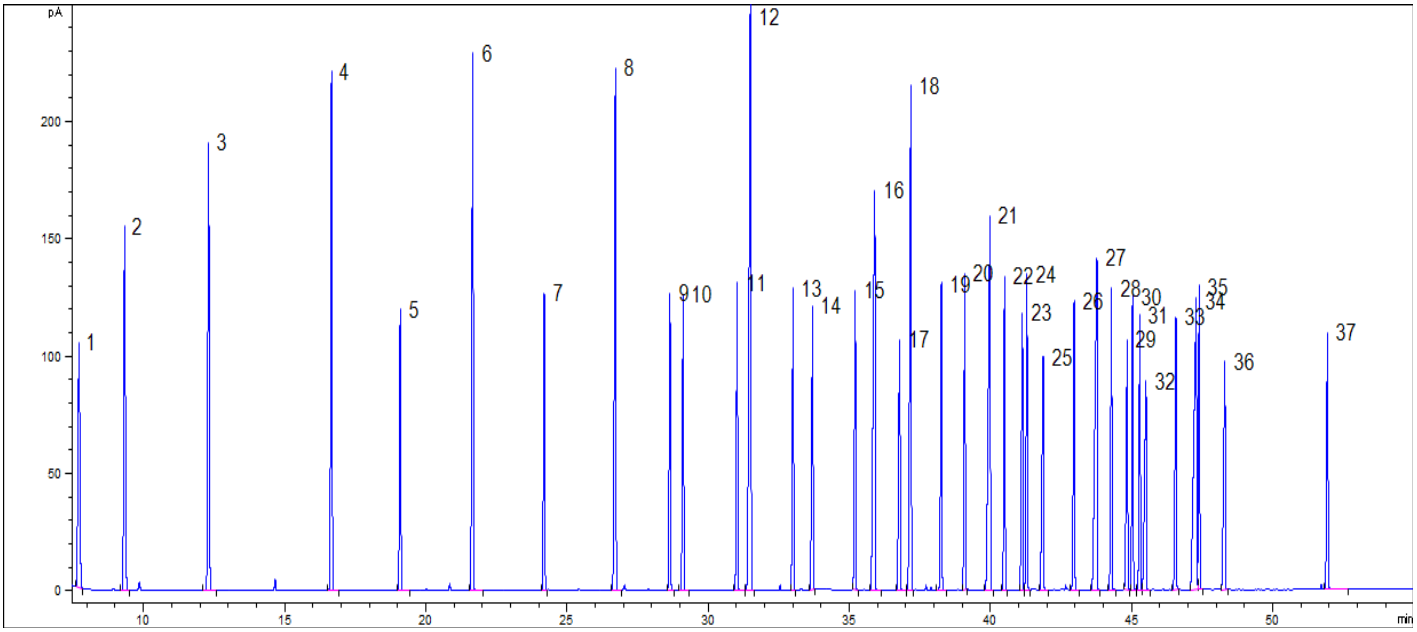
Storage Conditions	Freeze
Solvent/Matrix	METHYLENE CHLORIDE

Informational Values



Additional Information:

Analytical Method Parameters:
Column: SP-2560, 100 m × 0.25 mm I.D., 0.25 µm film thickness
Carrier Gas: H2, Flow: 1.8 mL/min
Inlet Temperature: 200 °C, Injection Volume: 1 µL
Injection Mode: Split (Split Ratio: NA)
Temperature Program: 100 °C (Hold 3 min) @ 3 °C/min to 240 °C (Hold 7 min)
Detector: FID, Detector Temperature: 250 °C

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1 **Metrological traceability:** Traceable to the SI and higher order standards from NIST through an unbroken chain of comparisons. The balance used to weigh raw materials is accurate to +/-0.0001 g and calibrated regularly using mass standards traceable to NIST. All dilutions were performed gravimetrically. Additionally, individual analytes are traceable to NIST SRMs where available and specified above.
4 Ucrm - Uncertainty values in this document are expressed as Expanded Uncertainty (Ucrm) corresponding to the 95% confidence interval. Ucrm is derived from the combined standard uncertainty multiplied by the coverage factor k, which is obtained from a *t*-distribution and degrees of freedom. The components of combined standard uncertainty include the uncertainties due to characterization, homogeneity, long term stability, and short term stability (transport). The components due to stability are generally considered to be negligible unless otherwise indicated by stability studies. The mathematical representation of the Ucrm calculation is as follows:

$$u_{CRM} = \sqrt{u_{char}^2 + u_{\text{hom } ogeneity}^2 + u_{stability}^2}$$

***k*:** Coverage factor derived from a t-distribution table, based on the degrees of freedom of the data set. Assume 2.0 for a **Confidence interval = 95%**

6 Analytical Value- For QC verification of the certified value only- not to be used in calculations. Represents the analytical data obtained by comparison to a standard as analyzed by the method described in the CoA or another acceptable method. The result may differ from the certified value and UCRM based on method uncertainty as well as the uncertainty associated with the standard used for comparison.

Traceability: The standard was manufactured under an ISO/IEC 17025:2017 certified quality system. The balance used to weigh raw materials is accurate to +/- 0.0001g and calibrated regularly using mass standards traceable to NIST. All dilutions were preformed gravimetrically. Additionally, individual analytes are traceable to NIST SRMs where available and specified above.

Homogeneity: Homogeneity was assessed in accordance with ISO 17034:2016. Completed units were sampled using a random stratified sampling protocol. The results of chemical analysis were then compared using a one-way analysis of variance approach as described by TNI EL-V3-2009 Appendix A.2. See Instructions for minimum sub-sample size.

Expiration is at end of month given on certificate and label.

MSDS reports for components comprising greater than 1.0% of the solution or 0.1% for components known to be carcinogens are available upon request.

THIS PRODUCT WAS DESIGNED, PRODUCED AND VERIFIED FOR ACCURACY AND STABILITY IN ACCORDANCE WITH **ISO/IEC 17025:2017 (ANAB Cert AT-1467)** and **ISO 17034:2016 (ANAB Cert AR-1470).**

Andy Ommen - QC Manager

Mark Pooler - QA Supervisor

Certification Date	July 15, 2020
Version	0-7152020

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER