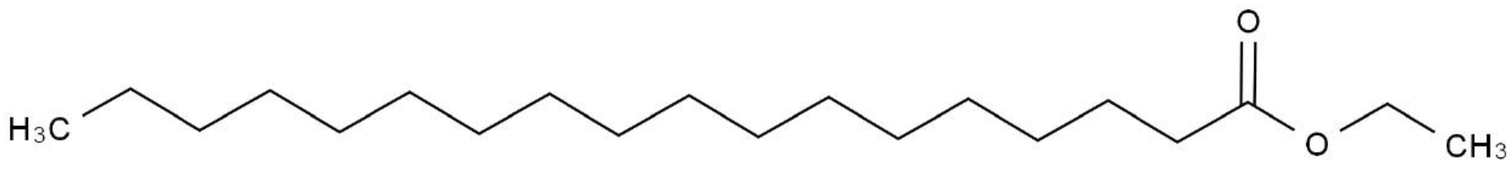
Certificate of Analysis

Reference Material & Standard

Product Name:	Octadecanoic Acid Ethyl Ester	**Catalogue Number:**	CCFD200200
Synonyms:	N/A	**Lot Number:**	0518-RE-0002
CAS Number:	111-61-5	**Expiry Date:**	Sep 10, 2030
Molecular Formula:	$C_{20}H_{40}O_2$	**Storage:**	Room Temp Protected from light and Sealed
Molecular Weight:	312.53	**Shipping Condition:**	Shipping at Room Temperature
		Warning:	

Chemical Structure:



Test Items	Method	Results
Appearance	Visual inspection	White Solid
Identification	GCMS&IR&UV&HNMR	Confirmed
Purity	GC	99.419%
Loss on Drying	TGA	0.1269%
Assay		99.3%
Uncertainty		±0.2%

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Comment:

1. The calculation of the mass balance method follows the formula (calculated on the non-dried basis):
*Assay (%) = (100%-Loss on Drying) * Purity GC (%) /100%*
Loss on Drying is considered as absolute effect, GC purity is considered as relative effect.
2. The uncertainty values are the expanded uncertainty and represent an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.

Signature:

Prepared by: Lisa Date: Sep 11, 2026

Reviewed by: Hinlam Date: Sep 11, 2026

Approved by General Manager: David Date: Sep 11, 2026

CATO Research Chemicals Inc.