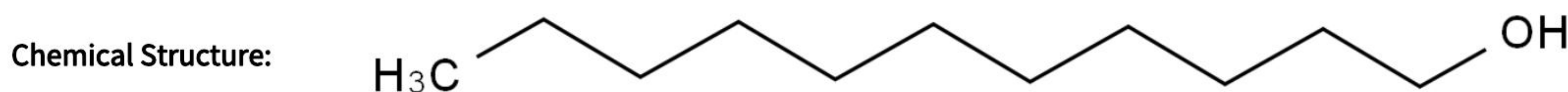


# Certificate of Analysis

## Reference Material & Standard

|                    |                                   |                   |                                                                                     |
|--------------------|-----------------------------------|-------------------|-------------------------------------------------------------------------------------|
| Product Name:      | 1-Undecanol                       | Catalogue Number: | CCEM500133                                                                          |
| Synonyms:          | N/A                               | Lot Number:       | 0711-RG-0025                                                                        |
| CAS Number:        | 112-42-5                          | Expiry Date:      | Jul 14, 2029                                                                        |
| Molecular Formula: | C <sub>11</sub> H <sub>24</sub> O | Storage:          | Room Temp Protected from light and Sealed                                           |
| Molecular Weight:  | 172.31                            | Warning:          |  |



| Test Items     | Method            | Results           |
|----------------|-------------------|-------------------|
| Appearance     | Visual inspection | Colourless Liquid |
| Identification | GCMS&HNMR         | Confirmed         |
| Purity         | GC                | 100.000%          |
| Water Content  | Karl Fischer      | 0.4610%           |
| Assay          |                   | 99.5%             |
| Uncertainty    |                   | ±0.2%             |

## Comment:

1. The calculation of the 100% method follows the formula (calculated on the non-dried basis):

$\text{Assay (\%)} = (100\% - \text{Water Content}) * \text{Purity GC (\%)} / 100\%$

Water Content 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:

*Nice*

Reviewed by:

*Lisa*

Approved by General Manager:

*David*

Date: Jul 15, 2025

Date: Jul 16, 2025

Date: Jul 16, 2025

