



CERTIFICATE OF ANALYSIS

20 Martin Ross Avenue, North York, ON, M3J 2K8, CANADA
Tel: (416) 665-9696, Fax: (416) 665-4439
Email: orders.trc@lgcgroup.com Website: www.trc-canada.com

1. Identification

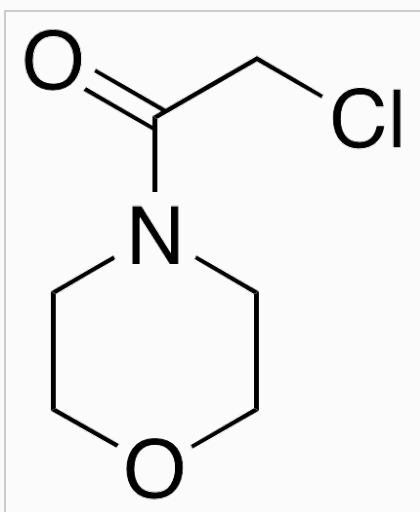
Catalogue Number: C363700

CAS Number: 1440-61-5

Product: 4-(Chloroacetyl)morpholine

Synonym: 2-Chloro-1-(4-morpholinyl)ethanone; 2-Chloro-1-(morpholin-4-yl)ethanone; 2-Chloro-1-morpholino-1-ethanone; 2-Chloro-1-morpholinoethanone; 4-Morpholinylcarbonylmethyl Chloride; Chloroacetic Acid Morpholine; Chloroacetic Acid Morpholine Amide; N-(Chloroacetyl)morpholine; NSC 54542;

Structure:



Molecular Formula:

C₆H₁₀ClNO₂

Molecular weight:

163.6

Source of Product:

N/A

Solubility:

Chloroform (Slightly),
Methanol (Slightly)

Lot Number: 21-ZEA-100-1

Purity: 94%

Shipping Condition: This Product Is Stable To Be Shipped At Room Temperature

Storage Condition: 4°C

2. Warning

Warning 1:

Warning 2:

Warning 3:

3. Analytical Information

Tests:	Specifications:	Results:
Elemental Analysis	Conforms	%C: 43.61, %H: 6.23, %N: 8.34
Appearance	Colourless to Pale Yellow Oil to Low-Melting Solid	Clear Colourless Oil
NMR	Conforms to Structure	Conforms
MS	Conforms to Structure	Conforms
GC	Report Result	93.83%

Additional Information: N/A

Purity is based on the analytical results of the tests performed. NMR and Elemental Analysis (if available) may have an accuracy of $\pm 2\%$. Isotopic purity is based on mass distribution observed. The contents of the specifications are subject to change without advance notice, and the specification values displayed here are the most up to date values.

4. Signatures

Reviewed By	Reviewed By	C of A Approved By	Test Date	Retest Date
Evan Burns	Toni Rantanen	Chanell Chu	8/17/2021	8/15/2025
				