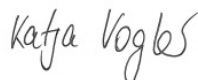


Certificate of Analysis

Product Name: 1-Chlorobutane
CHROMASOLV®, for HPLC, >= 99.8 %
Product Number: 34958
Batch Number: SZBE3250V
Brand: Sigma-Aldrich
CAS Number: 109-69-3
Formula: CH₃(CH₂)₃Cl
Formula Weight: 92.57

TEST	SPECIFICATION	RESULT
assay (GC)	≥ 99.8	99.9 %
non-volatile matter	≤ 0.001	< 0.001 %
water (Karl Fischer)	≤ 0.01	0.005 %
free acid (as HCl)	≤ 0.001	< 0.001 %
free alkali (as NH ₃)	≤ 0.0002	< 0.0002 %
transmittance at 230 nm	≥ 65	> 65 %
transmittance at 240 nm	≥ 95	> 95 %
transmittance from 250 nm	≥ 98	> 98 %
product replaces Fluka 19748 and Aldrich 293229		
Production Date	21.Nov.14	
Expiry Date	10.Nov.16	
QC Release Date	15.Dec.14	



Katja Vogler
Quality Management
Seelze, Germany

Sigma-Aldrich warrants that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.