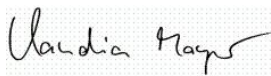


Certificate of Analysis

Product Name: (±)-γ-VALEROLACTONE
≥ 98 %, FCC, FG
Product Number: W310301
Batch Number: STBD1915V
Brand: Aldrich
CAS Number: 108-29-2
Formula: C₅H₈O₂
Formula Weight: 100.12
Expiration Date: JAN 2018
Quality Release Date: 21 JAN 2013

TEST	SPECIFICATION	RESULT
APPEARANCE (COLOR)	COLORLESS	COLORLESS
APPEARANCE (FORM)	LIQUID	LIQUID
PURITY (GC AREA %)	≥ 98.0 %	> 99.9 %
SPECIFIC GRAVITY	1.047 - 1.054	1.053
TEMPERATURE	25 DEG C	25 DEG C
REFRACTIVE INDEX N20/D	1.431 - 1.434	1.433
INFRARED SPECTRUM	CONFORMS TO STRUCTURE	CONFORMS
ARSENIC (ICP)	≤ 3 PPM	< 1 PPM
CADMIUM (ICP)	≤ 1 PPM	< 1 PPM
MERCURY (ICP)	≤ 1 PPM	< 1 PPM
LEAD (ICP)	≤ 10 PPM	< 1 PPM



Claudia Mayer, Manager
Quality Control
Steinheim, 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.