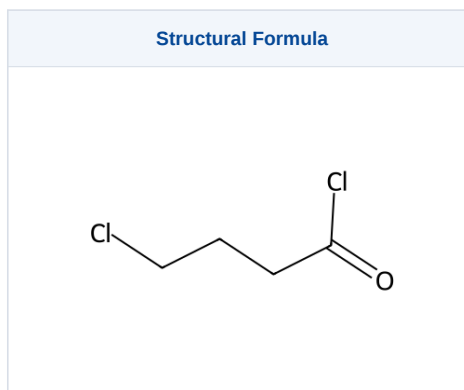


CERTIFICATE OF ANALYSIS

Standard product specification — applicable to all consignments of this product and grade supplied by Scapex Exports Pvt. Ltd., manufacturer and supplier of quality chemicals.

Product Name	4-Chlorobutyryl Chloride
C.A.S. Number	4635-59-0
Molecular Formula	C ₄ H ₆ Cl ₂ O
Molecular Weight	141.00
Grade / Standard	≥98%
Physical Form	Colorless to pale yellow liquid
Product Category	Pharmaceutical Intermediates
Country of Origin	India



ANALYTICAL RESULTS

S. No.	Test Parameter	Specification	Result	Method
1	Description	Colorless to pale yellow liquid	Complies	Visual
2	Identification	Conforms to the structure of the substance	Complies	FTIR / Chemical test
3	Assay	Not less than 98.0 % w/w	98.97	Titrimetry / Instrumental
4	Clarity & Colour of Solution	Clear; not more intensely coloured than reference	Complies	Visual (Monograph)
5	pH (1 % w/v aqueous solution)	As per monograph	6.7	Potentiometry
6	Water Content (Karl Fischer)	Not more than 0.5 % w/w	0.22	Karl Fischer titration
7	Melting Range / Point	As per monograph	Complies	Capillary method
8	Particle Size (d ₉₀)	As per specification	186 µm	Laser diffraction
9	Structure	Conforms to reference structure	Complies	FTIR / NMR

Remarks Material supplied against this specification is analysed on every production lot and conforms to the limits stated above in all tested parameters. Results shown are the typical values obtained for this grade. Retained samples are held against every export consignment. Store in tightly closed original packing, in a cool, dry, well-ventilated place away from incompatible materials and direct sunlight.	Checked and Approved by Prem Panchal Quality Assurance Scapex Exports Pvt. Ltd.
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This document sets out the standard specification for the product named above and applies to all consignments of this grade. It is issued by Scapex Exports Pvt. Ltd. as manufacturer and supplier. Refer to the Material Safety Data Sheet (MSDS) before handling.