



## Certificate of Analysis (COA)

Product: Trimesoyl Chloride (TMC)  
Chemical Name: 1,3,5-Benzene-tricarbonyl trichloride  
CAS No.: 4422-95-1  
Molecular Formula:  $C_9H_3Cl_3O_3$   
Molecular Weight: 285.48 g/mol  
Grade: Laboratory Grade (High Purity)  
Batch No.: TMC-L2401  
Date of Analysis: 03 Nov 2025  
Analyst: QC Department – Hafez Varesh Co.

### 1. Physical & Chemical Properties

Parameter	Specification	Result	Method
Appearance	White to off-white crystalline powder	Complies	Visual
Odor	Sharp, acid-chloride odor	Complies	Sensory
Melting Point	165 – 167 °C	166.2 °C	ASTM D1519
Boiling Point	~295 °C (decomposes)	Complies	Reference
Purity (GC)	≥ 99.5 %	99.8 %	GC-FID
Moisture (Karl Fischer)	≤ 0.2 %	0.08 %	ASTM E203
Acid Chloride Content	≥ 99.0 %	99.6 %	Titrimetric
Free Acid (Trimesic Acid)	≤ 0.1 %	0.05 %	HPLC
Hydrolyzable Chloride	≤ 0.1 %	0.03 %	Titrimetric
Heavy Metals (as Pb)	≤ 10 ppm	< 5 ppm	ICP-OES
Residual Solvent	Nil	Not Detected	GC
Solubility	Insoluble in water, soluble in benzene, chloroform	Complies	Visual

## 2. Safety & Storage

Property	Specification
UN Number	3265 (Corrosive Liquid, Acidic, Organic, n.o.s.)
HS Code	29172000
Storage Conditions	Keep tightly closed under inert atmosphere (N <sub>2</sub> or Ar), in a cool and dry place (< 25 °C), away from moisture.
Shelf Life	24 months under recommended storage conditions.
Handling	Use in fume hood with protective gloves and goggles. Hydrolyzes rapidly in presence of water.

## 3. Certification

This product has been analyzed and found to comply with the specifications stated above.  
All analytical methods are traceable to international standards.

Authorized by:  
QC Manager – Hafez Varesht Co.

For laboratory and R&D use only. Not for drug, household, or food applications.

مجتمع تولیدی حافظ وارش (سهامی خاص)

دانش بنیان