

## **CERTIFICATE OF ANALYSIS**

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2015 by Intertek. Certificate Number. 2317548

Lot NumberA0472734DescriptionThiamine hydrochloride,98.5-101.5%CAS Number67-03-8Quality Test/Release Date15/May/2025Suggested retest date15/May/2028Country of OriginCHINADeclaration of OriginsyntheticBSE/TSENot directly derived from or manufactured with any animal byproducts in any way (Including but not limited to fermentation or nutri broth, catalysts, enzymes).Result NameUnitsSpecificationsTest ValueAppearance (Color)White to almost white Crystalline powderWhite Crystalline powderInfrared spectrum%98.5 to 101.5 (On anhydrous substance)99.4 (On anhydrous substance)Water%=<5 (K.F.)2.7 (K.F.)Heavy metals (as Pb)ppm=<20=<2				
DescriptionThiamine hydrochloride,98.5-101.5%CAS Number67-03-8Quality Test/Release Date15/May/2025Suggested retest date15/May/2028Country of OriginCHINADeclaration of OriginsyntheticBSE/TSENot directly derived from or manufactured with any animal byproducts in any way (Including but not limited to fermentation or nutrier broth, catalysts, enzymes).Result NameUnitsSpecificationsTest ValueAppearance (Color)White to almost white ConformsWhite ConformsInfrared spectrum%98.5 to 101.5 (On anhydrous substance)99.4 (On anhydrous substance)Water%=<5 (K.F.)	Catalogue Number	14899		
CAS Number67-03-8Quality Test/Release Date15/May/2025Suggested retest date15/May/2028Country of OriginCHINADeclaration of OriginSyntheticBSE/TSENot directly derived from or manufactured with any animal byproducts in any way (Including but not limited to fermentation or nutrient broth, catalysts, enzymes).Result NameUnitsSpecificationsTest ValueAppearance (Color)White to almost whiteWhiteAppearance (Color)Crystalline powderCrystalline powderInfrared spectrumConformsConformsTitration with HCIO4%98.5 to 101.5 (On anhydrous substance)Water%=<5 (K.F.)	Lot Number	A0472734		
Quality Test/Release Date15/May/2025Suggested retest date15/May/2028Country of OriginCHINADeclaration of OriginsyntheticBSE/TSENot directly derived from or manufactured with any animal byproducts in any way (Including but not limited to fermentation or nutrient broth, catalysts, enzymes).Result NameUnitsSpecificationsTest ValueAppearance (Color)White to almost white Crystalline powderWhiteAppearance (Form)ConformsConformsInfrared spectrum%98.5 to 101.5 (On anhydrous substance)99.4 (On anhydrous substance)Water%=<5 (K.F.)	Description	Thiamine	hydrochloride,98.5-101.5%	
Suggested retest date15/May/2028Country of OriginCHINADeclaration of OriginsyntheticBSE/TSENot directly derived from or manufactured with any animal byproducts in any way (Including but not limited to fermentation or nutrient broth, catalysts, enzymes).Result NameUnitsSpecificationsTest ValueAppearance (Color)White to almost whiteWhiteAppearance (Form)Crystalline powderCrystalline powderInfrared spectrumConformsConformsTitration with HCIO4%98.5 to 101.5 (On anhydrous substance)99.4 (On anhydrous substance)Water%=<5 (K.F.)	CAS Number	67-03-8		
Country of Origin Declaration of OriginCHINABSE/TSENot directly derived from or manufactured with any animal byproducts in any way (Including but not limited to fermentation or nutrient broth, catalysts, enzymes).Result NameUnitsSpecificationsTest ValueAppearance (Color)White to almost whiteWhiteAppearance (Form)Crystalline powderCrystalline powderInfrared spectrumConformsConformsTitration with HCIO4%98.5 to 101.5 (On anhydrous substance)99.4 (On anhydrous substance)Water%<<5 (K.F.)	Quality Test/Release Date	15/May/2025		
Declaration of OriginsyntheticBSE/TSENot directly derived from or manufactured with any animal byproducts in any way (Including but not limited to fermentation or nutrient broth, catalysts, enzymes).Result NameUnitsSpecificationsTest ValueAppearance (Color)White to almost whiteWhiteAppearance (Form)Crystalline powderCrystalline powderInfrared spectrumConformsConformsTitration with HCIO4%98.5 to 101.5 (On anhydrous substance)99.4 (On anhydrous substance)Water%=<5 (K.F.)	Suggested retest date	15/May/2028		
BSE/TSENot directly derived from or manufactured with any animal byproducts in any way (Including but not limited to fermentation or nutrient broth, catalysts, enzymes).Result NameUnitsSpecificationsTest ValueAppearance (Color)White to almost whiteWhiteAppearance (Form)Crystalline powderCrystalline powderInfrared spectrumConformsConformsTitration with HClO4%98.5 to 101.5 (On anhydrous substance)99.4 (On anhydrous substance)Water%=<5 (K.F.)	Country of Origin	CHINA		
BSE/TSE   (Including but not limited to fermentation or nutrient broth, catalysts, enzymes).     Result Name   Units   Specifications   Test Value     Appearance (Color)   White to almost white   White     Appearance (Form)   Crystalline powder   Crystalline powder     Infrared spectrum   Conforms   Conforms     Titration with HClO4   %   98.5 to 101.5 (On anhydrous substance)     Water   %   =<5 (K.F.)	Declaration of Origin	synthetic		
Result NameUnitsSpecificationsTest ValueAppearance (Color)White to almost whiteWhiteAppearance (Form)Crystalline powderCrystalline powderInfrared spectrumConformsConformsTitration with HCIO4%98.5 to 101.5 (On anhydrous substance)Water%=<5 (K.F.)	BSE/TSE	Not directly derived from or manufactured with any animal byproducts in any way		
Appearance (Color) White to almost white White   Appearance (Form) Crystalline powder Crystalline powder   Infrared spectrum Conforms Conforms   Titration with HCIO4 % 98.5 to 101.5 (On anhydrous substance)   Water % =<5 (K.F.)		(Including but not limited to fermentation or nutrient broth, catalysts, enzymes).		
Appearance (Form) Crystalline powder Crystalline powder   Infrared spectrum Conforms Conforms   Titration with HClO4 % 98.5 to 101.5 (On anhydrous substance)   Water % =<5 (K.F.) 2.7 (K.F.)   Heavy metals (as Pb) ppm =<20 =<2   Sulfated ash % =<0.1 0.04				
Infrared spectrumConformsConformsTitration with HClO4%98.5 to 101.5 (On anhydrous substance)99.4 (On anhydrous substance)Water%=<5 (K.F.)	Result Name	Units		
Titration with HClO4%98.5 to 101.5 (On anhydrous substance)99.4 (On anhydrous substance)Water%=<5 (K.F.)	Result Name Appearance (Color)	Units	Specifications	Test Value
Titration with HCIO4substance)99.4 (On anhydrous substance)Water%=<5 (K.F.)		Units	Specifications White to almost white	Test Value White
Substance)     Substance)       Water     %     =<5 (K.F.)	Appearance (Color)	Units	Specifications White to almost white Crystalline powder	Test Value White Crystalline powder
Heavy metals (as Pb)ppm=<20=<2Sulfated ash%=<0.1	Appearance (Color) Appearance (Form) Infrared spectrum		Specifications White to almost white Crystalline powder Conforms	Test Value White Crystalline powder Conforms
Sulfated ash % =<0.1 0.04	Appearance (Color) Appearance (Form)		Specifications White to almost white Crystalline powder Conforms 98.5 to 101.5 (On anhydrous	Test Value White Crystalline powder Conforms
	Appearance (Color) Appearance (Form) Infrared spectrum	%	Specifications White to almost white Crystalline powder Conforms 98.5 to 101.5 (On anhydrous substance)	Test Value White Crystalline powder Conforms 99.4 (On anhydrous substance)
Sulfate (SO4) ppm =<300 =<300	Appearance (Color) Appearance (Form) Infrared spectrum Titration with HClO4	%	Specifications White to almost white Crystalline powder Conforms 98.5 to 101.5 (On anhydrous substance) =<5 (K.F.)	Test Value White Crystalline powder Conforms 99.4 (On anhydrous substance) 2.7 (K.F.)
	Appearance (Color) Appearance (Form) Infrared spectrum Titration with HClO4 Water	% % ppm	Specifications White to almost white Crystalline powder Conforms 98.5 to 101.5 (On anhydrous substance) =<5 (K.F.) =<20	Test ValueWhite Crystalline powder Conforms99.4 (On anhydrous substance)2.7 (K.F.)=<2

Geert Torfs Supervisor, QC

Products are processed under ISO 9001:2015 quality management systems and samples are tested for conformance to the noted specifications. Certain data may have been supplied by third parties. We disclaim the implied warranties of merchantability and fitness for a particular purpose, and the accuracy of third-party data or information associated with the product. Products are for research and development use only. Products are not for direct administration to humans or animals. It is the responsibility of the final formulator or end user to determine suitability, and to qualify and/or validate each product for its intended use.

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of the catalogue number listed above.