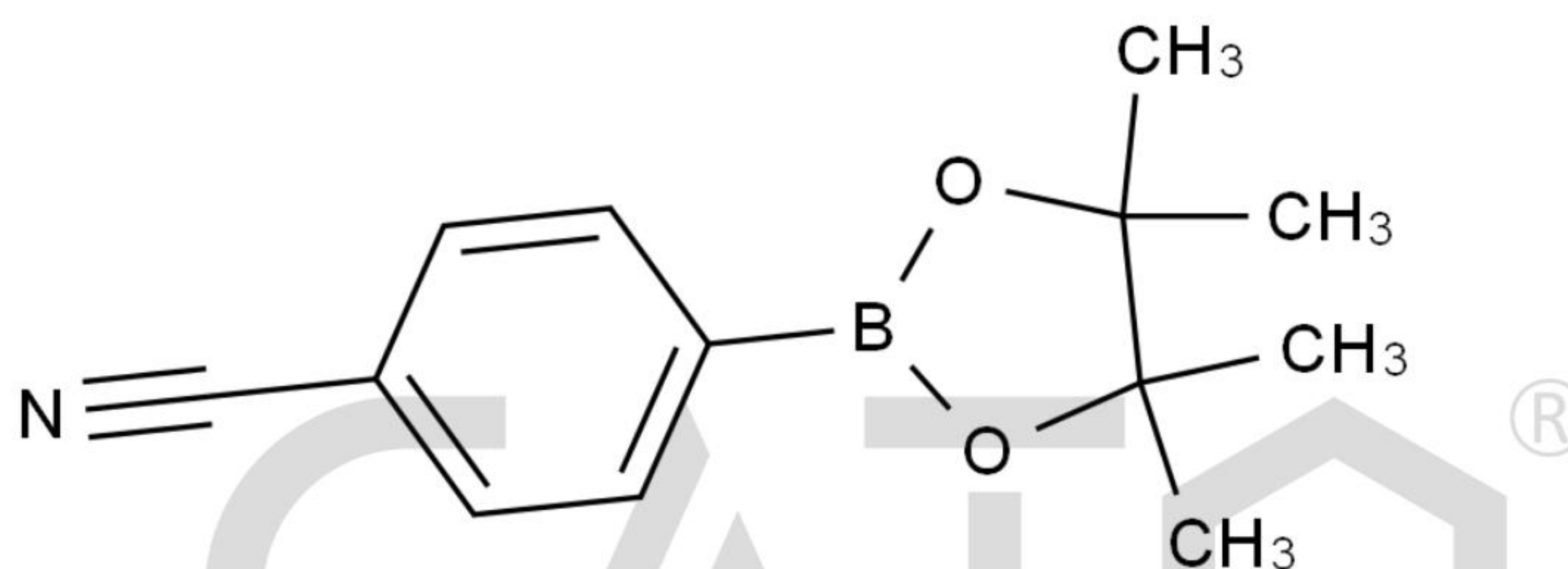


Certificate of Analysis

Reference Material & Standard

Product Name:	4-(4,4,5,5-Tetramethyl-1,3,2-dioxaborolan-2-yl)benzonitrile	Catalogue Number:	CS238874
Synonyms:	N/A	Lot Number:	0412-RE-0013
CAS Number:	171364-82-2	Expiry Date:	Apr 19, 2027
Molecular Formula:	C ₁₃ H ₁₆ BN ₂ O ₂	Storage:	Room Temp Protected from light and Sealed
Molecular Weight:	229.08	Warning:	

Chemical Structure:



Test Items	Method	Results
Appearance	Visual inspection	White Powder
Identification	GCMS&HNMR	Confirmed
Purity	GC	98.660%
Loss On Drying	TGA	0.3472%
Assay		98.3%
Uncertainty		±2.0%

Comment:

1. The calculation of the 100% method follows the formula (calculated on the non-dried basis):

$$\text{Assay (\%)} = (100\% - \text{Loss On Drying}) * \text{Purity GC (\%)} / 100\%$$

Loss On Drying is considered as absolute effect, GC purity is considered as relative effect.

2. The uncertainty values are the expanded uncertainty and represent an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.

Signature:

Prepared by:

Hin Lam

Reviewed by:

Lisa

Approved by General Manager:

David

Date: Apr 20, 2023

Date: Apr 20, 2023

Date: Apr 20, 2023

