



TotallyNaturalSolutions  
aromas & flavours to inspire

## Certificate of Analysis

### CERTIFICATE OF ANALYSIS

Customer:	Selected Brewing Ingredients	Order #:	Pieter van Rooij
Product:	HopAlpha® Iso 30%	Reference:	SO2136
Quantity:	5 x 1KG	Lot Number:	507C
Production Date:	December 2018		

<u>Parameter</u>	<u>Specification</u>	<u>Actual</u>
Appearance	A golden-yellow aqueous solution	OK
Aroma	Characteristic hop aroma	OK
Iso- $\alpha$ -acids (IAA) via HPLC (ICS-I3)	30.0 +/- 0.5 % w/w	30.03 % w/w
Relative Area Purity of Iso- $\alpha$ -acids via HPLC	>93 %	96.86 %
Alpha Acids (ICE-3)	< 0.1 % w/w	Not Detected
Beta Acids (ICE-3)	< 0.05 % w/w	Not Detected
pH	8.5 – 11.0	9.7
pH of 2% w/w in deionised water	8.8 – 9.5	9.0
Haze (2% solution remains bright for 1 hour at ambient temperature)	<5.0 EBC Units	Conforms
Density	1.060 – 1.080 kg/L	1.0725
Legal requirements	Conforms to Codex Alimentarius	

Method: EBC 7.9 via HPLC using ICS-I3

Recommended storage conditions:

Store in a cool, dry place, avoiding exposure to direct sunlight.

In ambient conditions (15 – 25°C)

2 Year after packaging

Certificate issued by:  
Simon Boulden  
Operations Manager  
For and on behalf of Totally Natural Solutions Limited

Date: April 2019