

## TECHNICAL DATA SHEET

### Granulated L-Threonine [Feed Grade, 98.5%]

#### COMMERCIAL GUARANTEE

L-Threonine content	98.5% minimum
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#### CHEMICAL SPECIFICATIONS

Chemical formula	C <sub>4</sub> H <sub>9</sub> NO <sub>3</sub>
Molecular weight <sup>1</sup>	119.12
Appearance	White to off-white, granule
Content	98.0% (on an as-is basis); 98.5% (dry matter basis)
Dry Matter	99.5% (minimum)
Bulk Density	0.6 to 0.7 kg/L
Total nitrogen <sup>1</sup>	11.52% (on an as-is basis)

#### NUTRITIONAL SPECIFICATIONS

Crude protein (%/16 g-N <sub>1</sub> )	72.02% (on a dry matter basis)	
Calculated energy <sup>‡</sup>		
Swine, DE	4,140 (kcal/kg)	1,878 (kcal/lb)
Swine, ME	3,790 (kcal/kg)	1,719 (kcal/lb)
Swine, NE	2,950 (kcal/kg)	1,338 (kcal/lb)
Poultry, ME	3,570 (kcal/kg)	1,619 (kcal/lb)

#### SHELF LIFE AND STABILITY

Shelf life (unopened)	3 years (25 kg Bags); 1 year (1,000 kg Totes)
Pelleting Stability	Stable under commercial pelleting conditions

#### PACKAGING SPECIFICATIONS

##### Threonine 25 kg bag:

Pallet size	1.02 m x 1.22 m (40" x 48")
Stack pattern	5 bags/layer; 8 bags high
Pallet weight	1,000 kg (2,205 lbs.)
Pallet dimensions (stacked)	Width 1.17 m x Depth 1.37 m x Height 1.17 m (46" x 54" x 46")

##### Threonine 1,000 kg tote:

Pallet size	1.02 m x 1.22 m (40" x 48")
Tote dimensions	Regular (Baffled, Unlined) 0.91 m x 0.91 m x 0.90 m (36" x 46" x 52") Short (Unlined) 0.99 m x 0.99 m x 1.52 m (39" x 39" x 60")
Loop size	25 cm (10") Standard lift loops on all four (4) corners
Discharge Spout dimensions	36 cm (14") diameter, 46 cm (18") length

<sup>1</sup> The Merck Index, 14th Edition (2006)

<sup>‡</sup> These values are for informational purposes only and do not constitute any commercial guarantee

The information contained herein is correct to the best of our knowledge. The recommendations or suggestions made in this document are made without guarantee or representation as to result.

***For animal feed only – not for human consumption***