

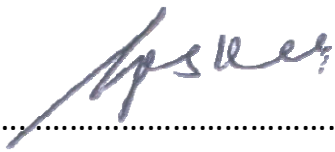


**Physical and Chemical Properties of SoluNeem
(Azadirachtin 6% WSP)**

CERTIFICATE

We certify that the information reported here is a true and authentic report of the study entitled **“Physical and Chemical Properties of SoluNeem (Azadirachtin 6% WSP)”** based on the study conducted at the analytical department of Vittal Mallya Scientific Research Foundation, Bangaluru-560076, India. The study is conducted in accordance with OPPTS Harmonized Test Guidelines, Series 830 - Product Properties Test Guidelines and the results presented here are faithful reflection of data collected during the study.

G.C. Reddy, Ph.D.
Study Director



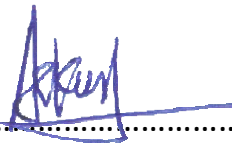
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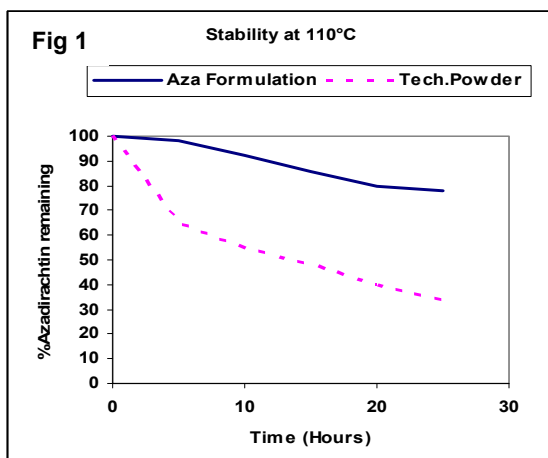


Physical and chemical properties

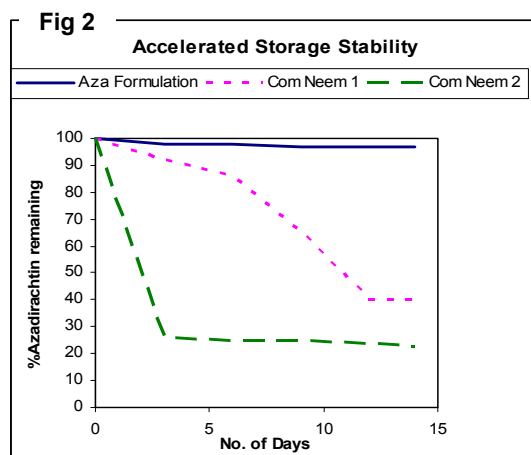
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|-------------------------------|-----------------------------|
| 1. Colour | : Pale yellow |
| 2. Physical state | : Powder |
| 3. Odour | : Characteristic neem odour |
| 4. Melting point | : Not applicable |
| 5. Boiling point | : Not applicable |
| 6. Density | : 0.2-0.4 g/ml |
| 7. Solubility (Shake flask) | : 2g/10ml |
| 8. Vapour pressure | : Not applicable |
| 9. pH (1% solution in water) | : 4.5-5.5 |
| 10. Storage stability | : Stable for 2 years |
| 11. Viscosity | : Not applicable |
| 12. Miscibility | : Ethanol, Methanol, Water. |
| 13. Corrosion characteristics | : Non-corrosive |
| 14. Flammability | : Not applicable |

Storage stability

The thermal stability of Soluneem was tested and was found to be highly stable even at 110° C, where a technical neem seed kernel extract (NSKE) was thermolabile (Fig 1).



Soluneem has been tested for accelerated storage stability and was found to have indefinitely long shelf life. The comparison of shelf lives (accelerated storage stability) for Soluneem and two commercially available neem pesticides is shown in Fig 2.



Shelf life of Soluneem

Shelf life of Soluneem was studied at 28 ± 2 ° C and relative humidity 60±5% for the period of 24 months by monitoring its Azadirachtin content.

Date of analysis	Period (months)	Azadirachtin content % w/w
16/6/07	Initial	6.30
16/10/07	4	6.26
16/2/08	8	6.21
17/6/08	12	6.19
20/10/08	16	6.15
16/2/09	20	6.11
18/6/09	24	6.09

During the 24 months study, a slight change in azadirachtin content in Soluneem batch with respect to initial values was observed suggesting that Soluneem is stable for a period of 24 months.