

प्रारंभिक व्यावसायिक परीक्षण रिपोर्ट
INITIAL COMMERCIAL TEST REPORT

संख्या/No. CSIR/CMERI/FMTTC/2025/011
माह/Month: FEBRUARY, 2025

THIS TEST REPORT VALID UP TO : 31ST JANUARY, 2032



**SUN AGRO
BATTERY OPERATED KNAPSACK SPRAYER
(MODEL: SA-BS1)**



कृषि मशीनरी प्रशिक्षण और परीक्षण केंद्र
Farm Machinery Training and Testing Centre
सीएसआईआर- केन्द्रीय यांत्रिक अभियांत्रिकी अनुसंधान संस्थान
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Type of Test : Initial Commercial Test

Test Code/Procedure : IS: 3906:1995, IS: 10134:1994
IS: 3652:1995 & IS: 11313:2007

Period of Test : October 2024 to November 2024

Test Report No. : CSIR/CMERI/FMTTC/2025/011

Month and Year : February 2025

- i) The results reported in this report are observed values and no corrections have been applied for atmospheric and site conditions.
- ii) The data given in this report pertain to the particular machine submitted by the applicant for test.
- iii) The results presented in this report do not in any way attribute to durability of the machine.
- iv) The report should not be reproduced in part or full without prior permission of the Director, CSIR- Central Mechanical Engineering Research Institute, Durgapur -713209 (West Bengal)
- v) **This test report is not covered under BIS certification. Therefore, the manufacturers cannot market the sprayer with ISI mark, only on the strength of this report.**
- vi) This report cannot be used for legal purposes.

SELECTED CONVERSIONS

1.	<u>Force</u>		
	1 kgf	=	9.80665 N
		=	2.20462 lbf
2.	<u>Power</u>		
	1 HP	=	1.01387 Metric HP (Ps)
		=	745.7 W
	1 Ps	=	735.5 W
3.	<u>Pressure</u>		
	1 psi	=	6.895 kPa
	1 kgf/sq.cm	=	98.067 kPa = 735.56 mm of Hg
	1 bar	=	100 kPa = 10 N/sq.cm.
	1 mm of Hg	=	1.3333 m-bar
4.	<u>Area</u>		
	1 ha	=	10000 m ² = 2.471 Acres

Report prepared by

Report verified by

1. SPECIFICATIONS**1.1 General**

Type	:	Battery Operated Knapsack Sprayer
Make	:	SUN AGRO
Serial No.	:	SA-BS1
Name of manufacturer	:	SUN AGRO Adarsh Service Station, G.E. Road, Supela, Bhilai, Chhattisgarh, Pin-490023
Year of manufacture	:	2024
Capacity of sprayer, l	:	18
Working Pressure, kg/cm ²	:	1 to 4

Motor (As per Sticker)

Type	:	D C Motor
No. of Motor	:	01
Make	:	AGROBEST
Serial number	:	Not specified
Motor operating voltage	:	12 V, DC
Motor power	:	36 Watt
Max. Current	:	3.0 A
Rated speed, rpm	:	3100

1.2 Battery

Type	:	Sealed, Lead-Acid Battery
Make	:	AGROBEST
Model	:	XK06-006-01061
Serial number	:	AD202406CY0430
Capacity & rating	:	12 V, 16 AH/20HR
Country of origin	:	Not Provided
Location	:	Below the chemical tank.

1.3 Battery Charger from AC Supply

Make	:	SUN AGRO
Model	:	Not specified
Input voltage	:	220V AC, 50 Hz
Output voltage	:	12 V, DC
Output current	:	1.3 A
Country of origin	:	India

1.4 Pump

Type	:	Diaphragm
Make	:	AGROBEST
Model	:	Not specified
Sr. number	:	Not specified
Method of drive	:	Off/ On Switch
Working pressure, kg/cm ²	:	1- 6
Rated pressure, kg/cm ²	:	3
Rated speed, rpm	:	3100
Discharge capacity at rated pressure, l/min	:	1.85
Country of origin	:	Not specified
Mounting arrangement	:	pump is mounted below the chemical tank by screws & bolt.

Report verified by
Subrata Kumar Mandal

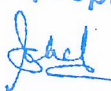
Report prepared by

Subrata Kumar Mandal

17. COMMENTS & RECOMMENDATIONS

- 17.1 The serial number of motor is not specified. It should be specified.
- 17.2 The make of battery is not specified. It should be specified.
- 17.3 The model of battery charger is not specified. It should be specified.
- 17.4 The model, serial number & country of origin of pump is not specified. It should be specified.
- 17.5 The material used for pump inlet port end fitting does not meet the requirements of Indian standard. It must be looked into.
- 17.6 The material for nozzle disc, tip does not meet the requirements of Indian standard. It must be looked into.
- 17.7 The spray lance is not marked and designated. It must be marked and designated as per standard.
- 17.8 The nozzle is not marked and designated. It should be marked and designated as per standard.
- 17.9 The cut off device is not marked and designated. It should be marked and designated as Per standard.
- 17.10 During the pump chamber hydraulic test, the motor stopped beyond 5.50 kg/cm² pressure against the pressure requirement of 7.5 kg/cm². Thus the sprayer does not meet the requirement of Indian Standard.
- 17.11 The tank capacity does not meet the requirement of Indian standard. It must be looked into.
- 17.12 The discharge rate and spray angle of Nozzle at a pressure of 300 kPa has not been declared by the applicant. It must be declared.
- 17.13 The strap cushion is not provided. It must be provided.
- 17.14 The material and length of spray lance does not meet the requirements of Indian standard. It must be looked into.
- 17.15 The average size of the strainer in cut off device does not meet the requirements of Indian standard. It must be looked into.

Report prepared by



Report verified by
Subrata Kr Mandal

18. TECHNICAL LITERATURE

The operator, maintenance & parts manual of sprayer was not provided during the test. The manual should be submitted as per IS: 8132:1999, with the inclusion of safety instructions regarding handling poisonous agrochemical and first aid.

TESTING AUTHORITY

Report Prepared by	Sr. Technical Officer, CSIR-CMERI Farm Machinery Testing Centre	<i>[Signature]</i> 14/02/2025
Report Verified & Approved by	In-Charge, CSIR-CMERI Farm Machinery Testing Centre	<i>[Signature]</i> 14/02/2025
Report Approved for release by	Head, Business Development Unit, CSIR-CMERI, Durgapur	<i>[Signature]</i> 14/2/25

19. APPLICANT'S COMMENTS

Para No.	Our Reference	Applicant's Comments
19	17.1 to 17.15	We have gone through the draft test report along with the points from 17.1 to 17.15, we will take necessary steps with your recommendation in future production. Request you to please do the needful for the release of the commercial test report.

