प्रारंभिक व्यावसायिक परीक्षण रिपोर्ट
INITIAL COMMERCIAL TEST REPORT

संख्या/No. CSIR/CMERI/FMTTC/2023/003
माह/Month: May, 2023

THIS TEST REPORT VALID UP TO : 31st MAY, 2028

BATTERY OPERATED KNAPSACK SPRAYER
SS GOLD/8AHBR

कृषि मशीनरी प्रशिक्षण और परीक्षण केंद्र
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CSIR/CMERI/FMTTC/2023/003	S S GOLD 8AIIBR BATTERY OPERATED KNAPSACK SPRAYER (INITIAL COMMERCIAL TEST)

Name & Address of Applicant : SUPREME SALES AGENCY
33/1, Netaji Subhas Road, Marshal House,
3rd Floor, Kolkata, West Bengal, Pin - 700001

Test Conducted at : Govt. of India
CSIR- Central Mechanical Engineering Research Institute, M.G. Avenue, Durgapur -713209
(West Bengal)

THIS TEST REPORT VALID UP TO: 31/05/2028

[vide DAC&FW OM No. 13-24/2018 – M&T (I&P) dated 19.09.2018]

Report No.: CSIR/CMERI/FMTTC/2023/003 **Month: May** **Year: 2023**

CSIR - Central Mechanical Engineering Research Institute,
Durgapur - 713209
(W.B.), INDIA

Motor power	:	**Not Specified**
Max. Current	:	2.6 A
Rated speed*, rpm	:	3800

1.3 Battery (As per Sticker)

Type	:	Lead-Acid Battery, Rechargeable & Sealed
Make	:	S S GOLD
Model	:	SDL 6-12
Serial number	:	XK06-006-01061
Capacity & rating	:	12V, 8 AH / 20HR
Country of origin	:	INDIA
Location	:	Below the chemical tank.

1.4 Battery Charger from AC Supply

Make	:	**Not specified**
Model	:	**Not specified**
Input voltage	:	50 Hz – 60Hz 110V – 240V – AC
Output voltage	:	12 V – DC
Output current	:	1.0 A
Country of origin	:	**Not specified**

1.5 Pump

Type	:	Diaphragm
Make & Model	:	**Not specified**
Sr. number	:	2022-5
Method of drive	:	Off/ On Switch
Working pressure*, kg/cm^2	:	5
Rated pressure*, kg/cm^2	:	3
Rated speed, rpm	:	3800
Discharge capacity at rated pressure, l/min	:	2.01
Country of origin	:	**Not specified**
Mounting arrangement	:	Battery, motor & pump is mounted below the Chemical tank.

* As per data provided by the applicant

1.6 Chemical Tank

Material of construction	:	PVC
Size (mm)	:	345 x 335 x 160
Capacity (l)	:	16
Location	:	Above battery, motor and pump mounting

1.7 Agitating Device : Not required.
However, there is a pump in equipment through which excess pumped spray solution returned to the tank. This returned spray solution full-fill the agitation of spray solution.

1.8 Nozzle

Type of nozzle	:	Flat-fan, Rain drop, Fixed Hollow Cone, Flood.
Nozzle designation	:	Not Marked
Number of nozzle	:	Four

1.9	**Mounting arrangement**	:	Battery, motor and pump is mounted beneath the chemical tank
1.10	**Accessories (for operator's safety against pesticides)**	:	Mask, hand gloves and goggles provided.
1.11	**Overall Dimensions, mm**		
	Height	:	478
	Width	:	185
1.12	**Total Mass, kg** Length	:	345
1.12.1	**Mass with all accessories and chemical tank, kg**	:	4.88
1.12.2	**Mass with accessories and chemical tank full, kg**	:	20.88
1.13	**Identification/Labelling plate**	:	An embossed 'SS GOLD **ISO 9001 2008'** on the tank of the sprayer.

Also One Sticker containing "SERIAL NO. – SSGSRRY08004" is pasted on the tank.

C-10 MARKING	Each cut-off device shall be marked with the following particulars:		
a)	Manufacturer's name or recognized trade-mark,	Marked	Conforms
b)	Batch or code number, and	**Not marked**	**Does not confirm**
c)	Type of cut-off device.	**Not marked**	**Does not confirm**
14.5 OTHER REQUIREMENTS AS PER IS: 3652-1995			
F-3.1 Rate of discharge F-3.1.1	The discharge rate of the nozzle shall be declared by the manufacturer. In case of adjustable nozzle, the declared value shall be for extreme adjustments for cone and jet spray patterns at a pressure of 300 kPa.	Declared as 2.10 ml/min for hollow cone spray pattern by the manufacturer.	Conforms
F-3.1.2	When tested in accordance with F-7, The nozzles shall provide a rate of discharge as given in Table-3. The rate of discharge shall be within ± 5 percent for fixed type and ±10 percent for adjustable type of nozzle, of the declared value.	Doesn't withstand the test. (Refer chapter 10 clause 10.1 of this test report).	**Does not confirm**
F-3.2 Spray Angle	The spray angle of the nozzle shall be declared by the manufacturer. The angle, when tested in accordance with method given in F-9 shall not differ by ±3 deg. for fixed type and ±5° for adjustable type nozzles from the declared value	The spray angle of nozzle is 75° as measured. The spray angle value is 70° - 80° declared by the manufacturer.	Conforms
F-3.3 Endurance test	The hydraulic spray nozzle when test in accordance with F-7 & F-9 at a pressure of 300±30 kPa for 48 hrs. duration with continuous stretches of 6 hrs. variation in discharge rate and spray angle from initial values should not be more than 5% and 3 degree respectively.	Withstand the test (Refer chapter 10 clause 10.3 of this test report).	Conforms
F-4 Other Requirements F-4.1	If strainer is provided, the average size of any side or diameter of the apertures shall be not more than 450 µm.	Strainer is not provided in the nozzle	–
F-4.2	At the option of the purchaser the provision shall be made for rotating the nozzle by hand to make it swivel type.	NA	–

F-5 Designation F-5.1	The cone and fan nozzle shall be designated by its identification mark, spray angle and discharge rate. An adjustable nozzle shall be designated by its identification mark AN-C-J for cone and Jet spray pattern and discharge rate at a controlled pressure of 300 kPa.	Not marked	**Does not confirm**
F-6 Workmanship & Finish F-6.1	The components of the spray nozzles shall be free from burrs and other defects; this applies particularly to the internal surfaces and specially to the orifice.	No noticeable defect observed.	Conforms
F-6.2	The mating faces of the cap, tip and nozzle body or boss, shall be finished flat so as to seal on the end face of the nozzle body or boss, a gasket may be used, if necessary.	Mating faces of nozzle body is provided with gaskets to seal on the end face of nozzle body.	Conforms
F-6.3	The screw thread shall be well formed and the crests of the threads shall be free from burrs or any other defects which may prevent free engagement.	Satisfactory	Conforms
F-11 Marking	Each nozzle shall be marked with following particulars:-		
	a) Manufacturer's name & recognized trade mark	**Not marked**	**Does not confirm**
	b) Nozzle designation	**Not marked**	**Does not confirm**
	c) Batch or code number	**Not marked**	**Does not confirm**

15. TEST FOR STRAP AND ITS ASSEMBLY

(Vide Clause 7.3 of IS 10134-1994)

Date of test: 20.04.2023

The sprayer was filled with clean water to its specified capacity. The sprayer was hung from a solid support by its straps simulating its carriage on the shoulder of an operator. The tank was vertically raised to height of 300 mm and was allowed to drop freely and hung by straps.

Observation: No damage was observed during test.

17.15 A suitable labelling plate (not sticker) needs to be provided with, inter alia, following information; -

i. Manufacturer's name
ii. Make
iii. Model
iv. Month & year of manufacture
v. Rated speed
vi. Rated pressure
vii. Discharge rate
viii. Power rating
ix. Country of origin

17.16 The User's manual shall meet the requirement given in Cl. 7.1 of IS 3652:1995.
17.17 The End fitting of the spray lance should be standardized as per IS:3652.

18. TECHNICAL LITERATURE

The operator, parts manual of sprayer was provided during the test which found adequate, however, the manual should be provided following the 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	12/05/2023
Report Verified by	Scientist, CSIR-CMERI Farm Machinery Testing Centre	12/05/23
Report Approved by	In-Charge, CSIR-CMERI Farm Machinery Testing Centre	12/05/2023
Report Approved for release by	Head, Business Development Group, CSIR-CMERI, Durgapur	12/5/23

19. APPLICANT'S COMMENTS

Para No.	Our Reference	Applicant's Comments
17	17.1-17.10	We will take corrective action in future production.
	17.11-17.17	We will modify it according to your suggestions.