

MATERIAL SAFETY DATA SHEET OF ENDOSULFAN 35% EC

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION:

Common Name	Endosulfan
Chemical Name	6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-6,9-methano-2,4,3-benzodioxathiepin 3-oxide.
Empirical Formula	C ₉ H ₆ Cl ₆ O ₃ S
Intended Use	Insecticide
Pesticide Family	Organochlorine /Cyclodiene pesticide
Manufactured By	JAI SHREE RASAYAN UDYOG LTD. M-4, Aradhana Bhawan, Commercial Complex, Azadpur, Delhi-110 033 Telephon No. +91-11-45750100 to 40 (40 lines) Telefax : +91-11-45750140
CAS NO.	115-29-7
Molecular weight	406.95

2. PHYSICAL & CHEMICAL PROPERTIES

Physical state	Liquid
Colour	Light Yellow to brown
Emulsion Stability	Stable emulsion for 24 hours (No creaming and no sedimentation)
Acidity (As H ₂ SO ₄)	0.05% max.
Solubility	Miscible with water
Stability	Stable at room temperature for 2 years
Compatibility	Compatible with non –alkaline pesticides
Acidity as H ₂ SO ₄	Not > 0.15 w/w
Boiling point / range	106°C
Melting point / range	77 - 100°C.
Flash point	61C°
Flammability	Flammable/ > 61C°
Auto ignition	Non-auto flammable
Oxidising properties	None
Vapour pressure	< 1 x 10 ⁻³ Pa (20c°)
Density	1.745 at 20°C
Water solubility	Emulsifies in water

3. COMPOSITION / INGREDIENTS

S. No.	Ingredients	%age	CAS No.
1	Endosulfan Technical a.i.	35.00 % w/w	115-29-7
2	Emulsifiers (Mixture of Ethylene oxide condensate of Alkyl-phenol and Sulphonated alkyl benzene)	10.00 % w/w	68412-54-4 and 26264-06-2
3	Solvent (Xylene)	55.00 % w/w	1330-20-7
	Total:	100.00 % w/w	

4. HAZARDS IDENTIFICATION

Symptoms of poisoning	Accidental ingestion or large quantities could produce tumours, anxieties and weakness of limbs, nervousness convulsion and allergic manifestation.
Skin	Coetaneous parenthesis may occur including numbness, itching, burning, tingling and warmth.
Eyes	Mild irritant.
Inhalation	May cause, after heavy exposure, hypersensitivity, ataxia, urinary incontinence.
Ingestion	May cause hypersensitivity, ataxia, urinary incontinence.
Other information	-
Physical/chemical effects	Flammable product.
Environmental effects	Toxic to aquatic organism.

5. FIRST AID

First Aid	If accidental contamination of the product, wash The effected area immediately with large amounts of water. Follow washings by irrigating eyes with normal saline of phosphate buffer solution. This should continue till eyes feel comfortable. Patient then should undergo medical attention.
Eye contact	Rinse immediately with plenty of water and seek medical advice.

Inhalation	Remove from exposure area to fresh air immediately. If breathing has stopped, perform artificial respiration. Keep person warm and at rest. Treat symptomatically and supportively. Get medical attention immediately.
Ingestion	Do not induce vomiting. Remove by gastric lavage and catharsis. Maintain blood pressure and airway. Give oxygen if respiration is depressed. Do not perform gastric lavage if victim is unconscious. Get medical attention immediately.
Other information	Treat symptomatically and supportively
Antidote	If ingested, take the patient to hospital and give gastric lavage with care to prevent aspiration. Give symptomatic and supportive treatment. Administer antihistamine in case of allergic symptoms occur. Phenobarbital may be used to control nervous symptoms. Treat symptomatically.

6. FIRE AND EXPLOSION DATA

Flash point	>58°C or 63°C
Extinguishing media	Dry chemical, carbon dioxide, water spray or standard foam.
Unsuitable extinguishing	High pressure water jet media
Special exposure hazards	Do not release chemically contaminated water into drains, soil and surface waters.
Special protective	As for all fires involving chemicals: chemical protection suit, suitable gloves equipment for fire-fighters and boots, and self-contained breathing apparatus.

7. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Use personal protective equipments.
Method of Cleaning Up	Do not touch spilled material. Stop leak if you can do it without risk. For small spills, take up with sand or other absorbent material and place into containers for later disposal. Move containers from spill area. For larger spills, dike far ahead of spill for later disposal.

Keep unnecessary people away. Isolate hazard area and deny entry. Ventilate closed space.

Environmental Precautions Prevent contamination of water.

8. HANDLING AND STORAGE

Handling : Keep product in original tightly closed container. Avoid exposure by inhalation. Do not eat, drink or smoke when handling. Wash hands before eating, drinking or smoking.

Storage : Keep in a cool dry place in original packing store under lock and key. Keep out of reach of children. Do not store near foodstuff. Poultry and domestic animals. Do not load with foodstuff while transportation. Check that containers are sound and labels undamaged before dispatch.

9. EXPOSURE CONTROLS/ PERSONAL PROTECTION.

Eye Protection Wear splash proof or dust resistant safety goggles and face shield.

Hand protection Rubber impermeable gloves

Respiration Wear an air respirator or self contained breathing apparatus impervious clothes so as to avoid skin contact.

10. STABILITY AND REACTIVITY

Stability Stable for 2 years under optimum condition of storage.

Conditions to avoid No special precautions other than good housekeeping of chemicals.

Material to avoid Strong oxidising agents

Hazardous decomposition Thermal decomposition products may emit toxic fumes of hydrogen cyanide and oxides of C and N

Incompatibility with other Incompatible with alkaline pesticides Material

11. TOXICOLOGICAL INFORMATION (a.i.)

LD ₅₀ Acute Oral	30 – 110 mg/kg b.w.
LD ₅₀ Acute Dermal	730 mg/kg b.w.
LD ₅₀ Acute Inhalation	Rat = 10 – 30 mg/lit. air
Skin Irritation	Rabbit = Slight irritation
Eye Irritation	Rabbit = Slight irritation
Skin Sensitization	Weak skin sensitizer.

12. ECOLOGICAL INFORMATION (a.i.)

Bees	Non-toxic to bees
Birds	Bobwhite Quail LC ₅₀ = 805 mg/kg Mallard Duck LD ₅₀ Oral = 243 mg/kg
The Aquatic Organisms (Pitch, Daphnia, Algae)	Daphnia Magna LD ₅₀ = >0.0002 mg/lit Blue-Green Algac (Nostoc linckia)LC ₅₀ (20H)=20,000 ug/lit.
	<u>Fishes</u> Bluegill Sunfish LD ₅₀ (96H) = 1.2 ppb Rainbow Trout LD ₅₀ (96H) = 1.4 ppb

13. TRANSPORT INFORMATION

UN No.	2996
IMCO Class	6.1
IMDG PG	6219
Packing Group	II
Proper Shipping Name	Organochlorine pesticide contains Endosulfan, liquod, toxic,
Environmental risk	Marine pollutant

14. REGULATORY INFORMATION

Hazard Symbol	The harmful symbol (Xn)
Risk phrases	R10, R20/22, R43 R51/53, R57
Safety Phrases	S1/2, S13, S20/21, S36/37/39, S29/56

15. DISPOSAL PROCEDURES

Used packages, surplus materials and washings of insecticides and containers shall be dispose off in a safe manner so as to prevent environmental or water pollution. The used

packages shall not be left outside to prevent their re-use. Packages shall be broken and buried away from habitation.

16. OTHER INFORMATION

Endosulfan 35% EC is a Organochlorine group pesticide of moderate toxicity to mammals. It is readily absorbed from the gastrointestinal tract.

The information contained in this safety data sheet is given in good faith. It is accurate to our best of knowledge and belief and represents the most upto date information. The information given in this data sheet does not constitute or replace the users own assessment of work place risk as required by other health and safety legislation. Jai Shree Rasayan Udyog Ltd. will not be liable for any claims or damages arising out of use of this information.

For JAI SHREE RASAYAN UDYOG LTD.

AUTHORISED SIGNATORY