

**MATERIAL SAFETY DATA SHEET- APPLAUD****1. PRODUCT AND COMPANY IDENTIFICATION**

Chemical Name:	Buprofezin technical ingredient
Use	Insect Growth Regulator is effective against the nymph stages of whitefly, scales, mealybugs, planthoppers, and leafhoppers by inhibiting chitin biosynthesis, suppressing oviposition of adults, and reducing viability of eggs.
Manufacturer	RALLIS INDIA LIMITED 3301, GIDC ,ANKESHWAR (GUJARAT)INDIA E- MAIL :k.patel @rallis.co.in + 91 (2646) 221075 or 251264
Emergency Number	

2. COMPOSTION /INFORMATION ON INGREDIENTS

Chemical Nature	CAS Number	This product is a Formulation for direct use	
Active ingre.	69327-76-0	Concentration %	
Buprofezin		25%SC	
Synonyms		Buprofezin as Active ingredient	
Ingredients or impurities contributing to hazard		The other compounds of the formulation product are not classified as hazardous.	
NAFA Labeling			
Health : 1	Flammability :0	Reactivity : 0	Special : o

3. HAZARD IDENTIFICATION

Main Hazards	The product may be toxic to humans and to the environment if not used as recommended
Product effects	
Adverse health effects to humans	Applaud Insect Growth Regulator product was not very toxic, irritating or caused skin sensitization following acute exposures in laboratory animals. Also, its active ingredient buprofezin did not cause any significant developmental or reproductive effects. However, buprofezin caused liver and thyroid gland effects at relatively low doses as well as causing a limited increase in liver tumors in female mice. Buprofezin was negative for carcinogenicity in male mice and rats and was negative in numerous genotoxicity studies.
Environmental effects	Active ingredient Buprofezin is moderately persistent in the environment. It is stable to hydrolysis at pH 7 and 9, but has a half-life, T _{1/2} , of 51 days at pH 5. It has an aqueous photolysis T _{1/2} of 33 days, but is stable to soil surface photolysis. Applaud is practically non-toxic to birds and is slightly toxic to mammals on an acute basis but can be toxic with chronic exposures



Specific hazards

There are no other hazards related to the product

Main symptoms

No specific systems are described. Skin, Eyes and mucous membrane, irritation associated with product exposure evidence, suggests intoxication.

4. FIRST AID MEASURES

First Aid Measures

Remove to fresh air, Remove all contaminated clothing and wash the affected parts of the body thoroughly with plenty of water and soap during 30 minutes. If victim is unconscious and not breathing, apply artificial respiration or oxygenation. Take victim to the nearest medical care center, with this sheet.

Inhalation

Remove to fresh air, if breathing stops apply artificial respiration. If breathing is difficult, immediately call physician

Skin contact

Immediately wash with plenty of water and soap during 30 minutes after removing contaminated clothing. In case of effects/symptoms, call a physician. Wash the contaminated clothing prior to reuse them and dispose contaminated shoes.

Eye contact

Immediately flush with running water for at least 30 minutes. Call a physician.

Ingestion:

Do not induce vomiting, but do not stop if it happens spontaneously. Immediately call a physician.

Actions to be avoided:

Do not apply mouth to mouth respiration if the patient has swallowed the product. Give artificial respiration.

Protection for the first aid givers

Avoid skin or inhalation contact with the product during the process.

Notes for the physician

No specific antidote is available. If large amounts was swallowed, gastric emptying procedures as gastric lavage may be performed, taking great care to avoid pulmonary aspiration due to the risk of chemical pneumonite. Activated charcoal and saline laxatives may be administered due to probable active ingredient adsorption to activated charcoal. Symptomatic treatment must include, especially, support measures as the correction of hydro electrolytic and metabolic disorders as well as respiratory aid.

5. FIRE FIGHTING MEASURES

Extinguishing media

Foam, CO₂, dry chemical and, in last case, water.

Special Procedures

Wear appropriate PPE (personal protective equipment) to avoid direct contact with the product. PVC overall, rubber gloves and rubber boots are recommended. Wear self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Wear waterproof overalls, safety goggles, rubber boots and nitrile rubber, latex or PVC gloves. Respiratory protection must



	be used depending on the concentrations in the environment or on the extension of the spill/release. In this case, choose self-contained breathing apparatus. <u>Removal of ignition sources:</u> stop electric energy and turn off the sources that may produce sparks. Remove all the material that may start a fire (e.g. spilled diesel oil). <u>Inhalation, skin, mucous membrane and eyes contact prevention:</u> wear the garments and accessories described above
<u>Environmental precautions:</u>	Avoid contamination of surface waters sealing the entrance of the rain water galleries (culverts). Do not allow the residues of the released product reach water collections.
<u>Cleaning methods</u>	Stop and collect the spill with non-combustible absorbing materials (e.g. sand, earth, vermiculite, diatomous earth). Put the residues into a receptacle for disposal according to the local regulations. Clean, preferably with a detergent; avoid using solvents.
<u>Secondary hazards prevention</u>	Do not allow the products contaminate creeks, lakes, water fountains, wells, sewers, pluvial sewers and effluents.

7. HANDLING AND STORAGE

<u>Handling:</u>	<u>Technical measures:</u> wear PPE as described on item 8. Keep people, and specially children and domestic animals away from the place of work. Do not have direct contact with the product. <u>Workers exposure prevention:</u> wear PPE as described on item 8. Do not eat, drink or smoke during product handling. When opening a packaging, do it in a way to avoid leaks. Do not use damaged/defective personal protective and application equipment. Do not manipulate and/or carry damaged packaging. <u>Safe handling precautions :</u> wear PPE as described on item 8.
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Guidance to a safe handling

Wear PPE as described on item 8. Handle the product with appropriate local exhaustion or in a well-ventilated area. If handled in open environments, do it in the same direction as of wind. In case of intoxication symptoms, immediately stop the work and proceed as described on item 4 of this sheet.

Storage

Appropriate technical measures: keep the product in its original packing. Keep eventual residues of the product in its original packaging, appropriately closed.

Appropriate storage conditions

Keep the packing appropriately closed, at room temperature and protected from light. Keep it in a duly identified, exclusive place for toxic products. Lock the place to avoid the access of unauthorized persons and children.

Avoid: humid places and places with sources of heat.

Incompatible products and materials: do not store with food, beverages, including those intended for animal use.

Safe materials for packaging

Recommended: product already packed in an appropriate packaging

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering controls

Whenever applicable use ventilators, air circulators, exhausters suitable for gases and vapors; provide the work area with appropriate ventilation. The operator must always use breathing protective equipment, even when there is good natural or mechanical ventilation.

Specific Control Parameters:

Occupational exposure limits:

Common name : Applaud Buprofezin active ingredient

Exp. Limit : None established

Type : TLV/TWA

Biological indicators:

Common name : Applaud

Biological Limit : None established



Personal protective equipment: Breathing protection: wear rubber or silicone masks with chemical filter for pesticides combined with mechanical filter
Hands protection: wear nitrile rubber, latex, PVC or other waterproof material gloves.
Eye protection: wear safety goggles for chemical products.
Skin and body protection: wear long sleeve waterproof or hydro-repellent overalls and PVC boots.
Special Precautions: keep PPE duly clean and in adequate use conditions, performing inspections, sanitization and possible maintenance and/or substitution of damaged/defective equipment and parts from time to time.
Hygiene measures: Take shower and change the clothing after using the product. Wash contaminated clothing separately, avoiding its contact with another personal use tools.

9..PHYSICAL/CHEMICAL DATA

Physical State:	Liquid	Boiling Point:	NA
Colour:	White	Density:	1.18 g/mL at (20°C)
Odour:	characteristic	Solubility in water:	0.9mg/L (20°C)
Vapor Pressure:	1.25mPa (25°C)	Solubility in solvent:	chloroform: benzene toluene , acetone ,
pH(G/100ML)	5.88 AT 25° C	Molecular Weight:	305.4 (as Active. Ingre)
Melting point	NA	Flash point	NA

10..STABILITY AND REACTIVITY DATA

Chemical Stability	The product is stable under normal temperature and storage conditions.
Incompatibility with other materials	NA
Hazardous decomposition products	Fire produces carbon monoxide, carbon dioxide, nitrogen based compounds, chlorides and other non-identifiable organic substances
Hazardous Reaction products	There is no hazardous reaction known.

11 TOXICOLOGICAL INFORMATION

Acute toxicity:	<u>Oral LD50 in rats:</u> 2198 mg/kg <u>Dermal LD50 in rats:</u> > 5,000 mg/kg
Local Effects:	<u>Skin irritation in rabbits:</u> the product is considered none irritating. <u>Eye irritation rabbits:</u> the product is considered none irritating
Sensitization	the product is considered none sensitizing.
Chronic toxicity:	<u>Mutagenicity:</u> the product is considered non-mutagenic. <u>Carcinogenicity:</u> the active ingredient is considered non-carcinogenic. <u>Teratogenicity:</u> the active ingredient is considered non-teratogenic.



Reproductive effects: the active ingredient is considered as having no reproductive effect.

12. ECOLOGICAL INFORMATION

Environmental, behavioral effects and impact of the product:

Mobility: Active ingredient Buprofezin is moderately persistent in the environment. It is stable to hydrolysis at pH 7 and 9, but has a half-life, T_{1/2}, of 51 days at pH 5. It has an aqueous photolysis T_{1/2} of 33 days, but is stable to soil surface photolysis.
Persistence/Degradability: In the terrestrial dissipation studies, only one minor degradate, representing < 10% of applied parent compound, was detected. Neither it nor the parent compound were detected below the surface, zero- to 12-inch depth, soil layer .

Eco toxicological information: For Active ingredient
Fish: LC₅₀ (48h) for carp 2.7, rainbow trout >1.4mg/L
Toxicity to bees: no direct effect on bees

13. DISPOSAL CONSIDERATION

Treatment and disposal methods

Product: Inactivate the product through incineration in ovens designed to this kind of operation, equipped with chambers to wash effluent gases that are according to the competent authority regulations.

Product residues: Keep eventual residues of the product and/or products with expiration date expired in their original packaging, duly closed.

Used packaging: Store the empty packaging tightly closed until its devolution to the shop where they were acquired or to the address indicated in the invoice issued for the product. The final destination of empty packaging, after user's devolution, may only be done by registering company or companies that are legally authorized by competent authorities.

14. TRANSPORTATION INFORMATION:

Not consider in Hazardous chemicals

Signal word : Caution

Toxicity class :3

Follow local transportation rule



15. REGULATORY INFORMATION

Signal word : Caution

Toxicity class :3

Information on risk and safety according to the label:

Do not transport with foods, medicines, rations, animals and persons.

Do not eat, drink or smoke during product handling.

Do not apply the product with unprotected hands, use recommended Personal Protective Equipment (PPE).

Before wearing, check if the PPE are clean and decontaminated.

Do not use damaged and/or defective PPE, as well as leaking applying equipment.

Do not unstop nozzles, holes, tabulations or valves with the mouth

Keep away from Heat and open flame

Keep out of reach of children

16. OTHER INFORMATION

The information in this MSDS was obtained from sources, which we believe are reliable.

However, the information is provided without any warranty, express or implied, regarding its correctness

A properly trained person using these products intends this document only as a guide to the appropriate precautionary handling of the materials
