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		Date : 3 / 2 / 2010
		Supersedes : 15 / 12 / 2008
PYRINEX 48 EC		R-5796.DPD.NPF

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

Trade name : PYRINEX 48 EC
Chemical formula : Chlorpyrifos : C9H11Cl3NO3PS
Chemical description : Chlorpyrifos : O,O-diethyl O-3,5,6-trichloro-2-pyridyl phosphorothioate
Use : Insecticide
Company identification : Makhteshim Agan (UK) Limited
Unit 16, Thatcham Business
Village Colthrop Way
Thatcham Berkshire RG19 4LW United Kingdom
Emergency phone nr : National Chemical Emergency Centre:
Tel: 01865 407333

2. HAZARDS IDENTIFICATION

Main hazards : THIS COMPOUND INHIBITS CHOLINESTERASE.
Physical/Chemical Hazards : Flammable.
Human health hazards : Harmful by inhalation and if swallowed.
Irritating to eyes and skin.
May cause sensitization by skin contact.
Environmental hazard : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

3. COMPOSITION / INFORMATION ON INGREDIENTS

This product is considered to be hazardous and contains hazardous components.

Substance name	Value(s)	CAS No	EC No	Index No	Classification
Chlorpyrifos (ISO)	: 480 g/l	2921-88-2	220-864-4	015-084-00-4	---- T; R25 N; R50-53 (M fact. = 10000)
Xylene	: ca 45 %	1330-20-7	215-535-7	601-022-00-9	---- R10 Xn; R20/21 Xi; R38
CaABS/n-Butanol	: ca 4 %	----	----	----	---- R10 Xn; R22 R67 Xi; R37/38-41

4. FIRST AID MEASURES

Effects and symptoms : Exposure may result in excessive sweating , weakness , salivation , nausea , bradycardia , tachycardia , bronchorrhea , cough , bronchospasm , lung oedema , small pupils , central nervous depression , fasciculation and convulsions , headache , faintness and giddiness .
Inhalation : May result in systemic poisoning.
Ingestion : May result in systemic poisoning.
Skin contact : May result in systemic poisoning.
Eye contact : Redness , tears .
First aid
Inhalation : Remove victim to fresh air. Keep victim warm and at rest. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Immediately get medical attention.
Ingestion : Do not induce vomiting. Wash out mouth with plenty of water. Never give anything by mouth to an unconscious person. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Immediately get medical attention.

Makhteshim Agan (UK) Limited

Unit 16, Thatcham Business Village Colthrop Way Thatcham Berkshire RG19 4LW United Kingdom

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4. FIRST AID MEASURES (continued)

- Skin contact** : Remove affected clothing and wash all exposed skin area with soap and water, followed by warm water rinse. Obtain medical attention.
- Eye contact** : Wash off with plenty of water. Immediately consult an eye specialist.
- Note to physician** : Antidote 1: Atropine sulfate
 Antidote 2: Obidoxime chloride or Pralidoxime (PAM).
 Suggest serum and/or RBC cholinesterase determination.
 If ingested perform gastric lavage and administer activated charcoal.

5. FIRE-FIGHTING MEASURES

- Extinguishing media** : For small fire : dry chemical , carbon dioxide .
 For large fire: water spray , alcohol resistant foam .
- Special procedures** : Fight fires from a protected location . Dike fire control water for later disposal.
 Keep container cool by spraying with water .
- Special exposure hazards** : Thermal decomposition may generate : carbon monoxide , carbon dioxide ,
 hydrogen chloride , sulfur oxide , nitrogen oxides , phosphorus oxides , chlorides ,
 sulfides .
- Protection against fire** : Wear proper protective equipment. Self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions** : Use appropriate protection (see section 8). During cleaning activity, shut off ignition sources .
- Environmental precautions** : Dispose of this material and its container at hazardous or special waste collection point, In accordance with national and regional regulations . If the product has contaminated surface water, inform the appropriate authorities. Contaminated soil layers have to be dug out.
- After spillage and/or leakage** : In the event of minor spillage: Absorb in sand or other inert material . Use appropriate container to avoid environmental contamination.
 In the event of major spillage: Collect and contain as much free liquid as possible.
 Dike spills using absorbent or impervious materials such as sand or clay for later disposal.

7. HANDLING AND STORAGE

- Handling** : Do not breathe fumes . Avoid contact with skin and eyes.
- Storage** : Keep locked up . Keep container tightly closed. Keep container dry . Keep only in the original container in a cool, well ventilated place. Keep away from strong bases . Keep away from sources of ignition - No smoking .
- Packing** : Multi-layer high density polyethylene extrusion blow containers .
 Drums with polyethylene liner.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

- Industrial hygiene** : Ventilation required. Facilities storing or utilizing this material should be equipped with an eyewash facility and safety shower . Wash clothing before re-using. Wash hands thoroughly after handling.
- Personal protection**
- **Respiratory protection** : During spraying wear suitable respiratory equipment.
 - **Skin protection** : Wear suitable protective clothing .

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8. EXPOSURE CONTROLS / PERSONAL PROTECTION (continued)

- Hand protection : Wear suitable gloves.
- Eye protection : Chemical goggles or safety glasses.
- Occupational Exposure Limits**
- TLV-TWA [mg/m3] : (USA) Chlorpyrifos : 0.2, A4 skin (1999).
(USA) Xylene : 434, A4 (1996).

9. PHYSICAL AND CHEMICAL PROPERTIES

- Physical state : Liquid
- Colour : Clear - Amber
- Odour : characteristic
- Specific gravity : 1.06-1.08
- Molecular weight : Chlorpyrifos : 350.62
- Melting point [°C] : Chlorpyrifos : 41.5-43.5 (Pure)
- Decomposition point [°C] : Above 160°C (Pure)
- Vapour pressure mm/Hg : Chlorpyrifos : 2.4 x (10)⁻⁵ (25°C, Pure)
- Solubility in water : Emulsifiable
- Flash point [°C] : 32°C (Closed cup)
- Explosion limits - lower [%] : 1 (Xylene)
- Explosion limits - upper [%] : 7 (Xylene)

10. STABILITY AND REACTIVITY

- Physico-chemical stability : Stable under normal conditions.
- Hazardous decomposition products : Thermal decomposition may generate : carbon monoxide , carbon dioxide , hydrogen chloride , sulfur oxide , nitrogen oxides , phosphorus oxides , chlorides , sulfides .
- Hazardous reactions : Avoid contact with : strong oxidizing agents , strong acids , strong bases .
- Hazardous Polymerization : Will not occur.
- Conditions to avoid : Protect from (sun)light and excessive heat . Temperature exceeding : 75 °C .

11. TOXICOLOGICAL INFORMATION

- Rat oral LD50 [mg/kg] : 508
- Rabbit dermal LD50 [mg/kg] : > 2000
- Rat inhalation LC50 [mg/l/4h] : 3.3
- Dermal irritation (rabbit) : Irritating to skin.
- Eyes irritation (rabbit) : Irritating to eyes.
- Sensitization : Guinea pig maximization test: Sensitizer
- Carcinogenicity : Chlorpyrifos : Not carcinogenic
- Mutagenicity : Chlorpyrifos : Not mutagenic
- Reproductive toxicity : Chlorpyrifos : Not teratogenic in animal experiments

12. ECOLOGICAL INFORMATION

- Ecological effects information : No ecological information is known on the product. The data below are for Chlorpyrifos :

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12. ECOLOGICAL INFORMATION (continued)

96 H-LC50 - Rainbow trout [$\mu\text{g/l}$] : 7.1
48 H-LC50 - Daphnia magna [$\mu\text{g/l}$] : 1.7 (Pesticide Manual)
0.1 (MCW)
NOEC - Algae [mg/l] : >0.4 (Selenastrum capricornutum) (Pesticide manual)
LD50 Birds [mg/kg] : 476
Bees LD50 [$\mu\text{g/Bee}$] : Toxic to bees .
Persistence and degradability : Half-life time (t1/2) : 80-279 days (Soil)
Mobility : Not mobile
Bioaccumulative potential : Chlorpyrifos Does not bioaccumulate in aquatic organisms
Biodegraded by microorganisms

13. DISPOSAL CONSIDERATIONS

Disposal : Avoid release to the environment.
Dispose in a safe manner in accordance with local/national regulations.

14. TRANSPORT INFORMATION

- UN No. : 1993
- Proper shipping name : FLAMMABLE LIQUID, N.O.S. (45% Xylene)
- Packing group : III
- Class : 3
- H.I. nr : 30
- IMDG-Marine pollution : YES

15. REGULATORY INFORMATION

EU Classification : This product is provisionally labelled by the supplier in accordance to the EU regulations:

Symbol(s)  

R Phrase(s) : Xn: Harmful.
N: Dangerous for the environment.
R10 - Flammable.
R20/22 - Harmful by inhalation and if swallowed.
R36/38 - Irritating to eyes and skin.
R43 - May cause sensitization by skin contact.
R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S Phrase(s) : S02 - Keep out of the reach of children.
S13 - Keep away from food, drink and animal feedingstuffs.
S20/21 - When using, do not eat, drink or smoke.
S23 - Do not breathe gas/fumes/vapour/spray.
S24/25 - Avoid contact with skin and eyes.
S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.
S61 - Avoid release to the environment. Refer to special instructions/Safety data sheets.

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16. OTHER INFORMATION

Recommended uses and restrictions : None.
flammable

Text of R-phrases in heading 3 : : *R10 - Flammable.*
R20/21 - Harmful by inhalation and in contact with skin.
R22 - Harmful if swallowed.
R25 - Toxic if swallowed.
R37/38 - Irritating to respiratory system and skin.
R38 - Irritating to skin.
R41 - Risk of serious damage to eyes.
R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R67 - Vapours may cause drowsiness and dizziness.

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