



MATERIAL SAFETY DATA SHEET

KNOCKDOWN[®] 340EC

ASTRA INDUSTRIAL COMPLEX CO., LTD. (ASTRACHEM)
P.O. BOX 30447, AL-KHOBAR 31952
KINGDOM OF SAUDI ARABIA

1. PRODUCT IDENTIFICATION

Product Name: *KNOCKDOWN*[®] 340EC

Chemical Class: Organophosphate / Carbamate

Use: KNOCKDOWN[®]340EC is an agricultural insecticide / acaricide with a wide spectrum activity used for the control of various insects (particularly Lepidoptera, Hemiptera, Homoptera, Diptera and Coleoptera in soil or on foliage crops, including pome fruit, vines, olives, hops, vegetables, ornamentals, field crops, cucurbits, flax, cotton, tobacco, soybeans, etc.

Producer: Astra Industrial Complex Co., Ltd.
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2. COMPOSITION / INFORMATION ON INGREDIENTS

Substance	Proportions (% w/w)	Chemical structure
Chlorpyrifos CAS No. 2921-88-2 Chemical name: O,O-diethyl O-3,5,6-trichloro-2-pyridyl phosphorothioate (IUPAC) EC hazard T; R24/25 N; R50, R53	23.46 (240 ± 12 g/L)	 <chem>CCOP(=S)(OCC)c1cc(Cl)c(Cl)c1</chem>
Methomyl CAS No. 16752-77-5 Chemical name: S-methyl N-(methylcarbamoyloxy)thioacetimidate (IUPAC) EC hazard T+; R28 N; R50, R53	9.77 (100 ± 6 g/L)	 <chem>CN(C)C(=O)OS=C(S)C</chem>
Blend of anionic and nonionic surfactants	5.75	
Organic Solvent	61.02	



3. HAZARD IDENTIFICATION

Acute Effects

Swallowed:

The concentrate is moderately toxic. Small amounts swallowed incidental to normal handling operations are not likely to cause injury. However, swallowing larger quantities may cause serious injury or even death. If the liquid entered the lungs it may cause lungs injury or even death due to pneumonia.

Eye:

May cause eye irritation. Causes redness and pain..

Skin:

Prolonged exposure may cause skin irritation. No evidence of skin sensitization during manufacturing.

Inhalation:

Inhalation of excessive amount of spray may cause cholinesterase inhibition. Prolonged exposure to solvent may cause respiratory irritation and central nervous system depression.

Chronic effects:

A measurable change in plasma and red blood cell cholinesterase levels were seen in workers exposed to Chlorpyrifos spray.

4. FIRST AID MEASURES

First Aid:

Swallowed:

If poisoning occurs, contact a doctor. Do not give fluids or induce vomiting if person is unconscious or having convulsions. Get affected person to a doctor or hospital promptly.

Eye:

Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids. Get medical attention immediately.

Skin:

Remove contaminated clothing at once, wash skin thoroughly with soap and water. Obtain medical attention immediately.

Inhalation:

Get medical aid immediately. Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.



First Aid Facilities:

Obtain an emergency supply of Atropine injection.

Advice to doctor:

A cholinesterase inhibitor. Treat symptomatically. In case of poisoning, use antidote immediately after establishing an open airway and respiration. Atropine injection is the profaned antidote. Oximes, such as PAM protoplasm may be used in conjunction with atropine.

5. FIRE FIGHTING MEASURES

Flash point: > 27 C

Toxic gases containing oxides of sulphur and phosphorous may be evolved if involved in fires or exposed to extreme heat. Breathable air apparatus may be required in confined area. Stay upwind.

Extinguishing Media:

Water fog, dry chemical, foam or carbon dioxide. Alcohol resistant foams are preferred if available.

Special fire fighting procedures:

Fire fighters should use self contained breathing apparatus. Prevent runoff of fire water. Avoid exposure to smoke.

6. ACCIDENTAL RELEASE MEASURES

Contain spill and absorb with sand or proprietary absorbent (vermiculite). Prevent from entering drains, waterway or sewers. Collect in sealed open top containers for disposal.

Disposal:

Triple rinse containers, add rinsate to the spray tank, then offer container for recycling/reconditioning, or puncture top, sides and bottom and dispose of in landfill in accordance with local regulations. On-site disposal of concentrate is not acceptable.

7. HANDLING AND STORAGE

Keep out of reach of children, do not store with food, feed or other material to be used or consumed by humans or animals. Do not contaminate water supplies, lakes, streams, or ponds. Store in a secure, dry, well-ventilated area, segregated from oxidizers and incompatible materials. Protect from moisture.



8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Standards:

Exposure standard for Chlorpyrifos: 0.2 mg/m³ (OSHA PEC)

Engineering Controls:

Natural ventilation only required when handling the concentrate. A local exhaust should be used in confined areas to keep the level of solvent within acceptable limits.

Personnel Protection:

The concentrate is harmful, skin absorption is the most common route of exposure. May be irritated the eyes and skin. Repeated minor exposure may have cumulative effects. Avoid contact with the skin and eyes and avoid breathing the vapour. Do not inhale the spray mist. When opening the container of concentrate and preparing the spray, wear cotton overalls buttoned to the neck and wrist, washable hat and elbow-length PVC gloves. When using in an enclosed area wear face shield. If product spilled on skin wash affected area thoroughly with soap and water. After use and before eating drinking or smoking, wash hands, arms, face thoroughly with soap and water. After each day's use, wash gloves, face shield and contaminated clothing. Do not eat or smoke while spraying.

9. PHYSICAL AND CHEMICAL PROPERTIES

Assay:	Chlorpyrifos 240 ± 12 g/L + Methomyl 100 ± 5 g/L
Appearance:	Clear black liquid free of visible impurities.
Density:	0.9950 – 1.1150 Kg/L
Flash point:	25 C
Water Contents:	<5.0 g/Kg
Acidity as H ₂ SO ₄ :	<5.0 g/Kg

10. STABILITY AND REACTIVITY

Stability:	Stable under room temperature.
Conditions to avoid:	Contact with iron and strong alkalis and storage above 50 C
Polymerization	Will not occur
Condition to avoid:	None currently known
Incompatibility	Avoid contact with strong oxidizers



11. TOXICOLOGICAL INFORMATION

Knockdown 340EC:

Acute oral LD₅₀ for rat: 500 mg/Kg
Moderately toxic to birds and highly toxic to bees.

Chlorpyrifos Technical:

Acute oral LD₅₀ for rat: 160 mg/Kg
Acute dermal LD₅₀ for rabbits: 5,000 mg/Kg
Toxic to fish: Highly toxic to fish
LC₅₀ for bluegill sunfish: 0.002-0.010 mg/L (96h)

Methomyl Technical:

Acute oral LD₅₀ for rat: Male 34, Female 30 mg/kg
Acute dermal LD₅₀ for rabbits: >2000 mg/Kg
Toxic to fish: Moderately to highly toxic to fish
LC₅₀ for bluegill sunfish: 0.9 mg/l. (96h)

12. ECOLOGICAL INFORMATION

Toxic to fish, dangerous to bees

Do not spray and plants in flower while bees are foraging.

Do not contaminate dams, rivers or streams with pesticide or used container.

Do not use container for any other purpose.

Triple rinse containers with water and add rinsate to the spray solution.

Puncture top, bottom and sides of empty container, then crush and bury in an approved landfill, or bury under at least 500 mm of soil in a non-crop, non-pasture area away from water sources or homes.

13. DISPOSAL CONSIDERATION

Pesticide wastes are toxic. Do not reuse product containers. Dispose of product containers, waste containers and residues according to local health and environmental regulations.



14. TRANSPORT INFORMATION

UN. No:	UN 2903
Proper Shipping Name:	Pesticide, liquid, toxic, Flammable, N.O.S, flash point $\geq 23^{\circ}\text{C}$ (Chlorpyrifos; Methomyl)
Class:	6.1
Classification Code:	TF2
Packing group:	III
Subsidiary Risks:	6.1 + 3
Special provisions:	61
Limited quantities:	LQ19
Packaging:	Packing instructions P001, IBC03, R001 Special packing provisions - Mixed Packaging Provisions MP15 Instructions T7
UN Portable tanks	Special Provisions TP2 Tank Code L4BH
ADR Tank	Special Provision TU15 TE1 TE15 TE19 Vehicle for tank carriage FL Transport Category 2
Special provision carriage	Packages - Bulk - Loading, unloading & Handling Operation CV13 CV28 S2 S9
Hazard Identification	63

15. REGULATORY INFORMATION

SARA, Title III
Chlorpyrifos (CAS: 121-75-5)
Section 311/312
Acute Health Hazard
Chronic Health Hazard

16. OTHER INFORMATION

Buyer assumes all responsibility for safety and use not in accordance with the product label instructions.