1. IDENTIFICATION

Product name:	**PITCH™ 0.86 EC**
Chemical name of active ingredient(s):	Pyriproxyfen: 2-[1-methyl-2-(4-phenoxyphenoxy)ethoxy]pyridine
Manufacturer:	Makhteshim Agan of North America, Inc. 3120 Highwoods Boulevard, Suite 100 Raleigh, NC 27604 Phone: 919-256-9300
For fire, spill, and/or leak emergencies, contact Infotrac:	Phone: 800-535-5053
For medical emergencies and health and safety inquiries, contact Prosar:	Phone: 877-250-9291

2. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS NO.	%	ACGIH/TLV	OSHA/PEL	OTHER	NTP/IARC/OSHA (Carcinogen)
Pyriproxyfen	95737-68-1	11.23	0.1 mg/m^3 (TWA)	NA	NA	NA
Heavy aromatic petroleum hydrocarbons	64742-94-5	45-52	NE	NA	NA	NA
Contains Naphthalene (% of total)	91-20-3	4-6	52 mg/m^3 10 ppm (TWA) 15 ppm (STEL)	50 mg/m^3 10 ppm (TWA)		NTP – 2* IARC –2B**

* Substances that may reasonably be anticipated to be carcinogens.
** Substance is possibly carcinogenic to humans.

3. HAZARDS IDENTIFICATIONS

PHYSICAL PROPERTIES:

APPARANCE: Pale yellowish clear liquid
ODOR: Mild aromatic

EMERGENCY OVERVIEW: CAUTION Causes skin and eye irritation. Do not get on skin, in eyes, or on clothing. Harmful if inhaled, swallowed or absorbed through skin. Avoid contact with skin, eyes or clothing. Avoid breathing vapor or spray mist. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash clothing before reuse.

SYMPTOMS OF EXPOSURE: The acute toxicity of this product is relatively low; transient, minimal signs of toxicity were observed in animals at high oral doses. This product contains a solvent mixture. Solvents, when inhaled, can cause nasal and respiratory irritation and central nervous system effects including dizziness, weakness, fatigue, nausea, headache and possibly unconsciousness and even death. Ingestion of solvents can cause gastrointestinal irritation, nausea, vomiting and diarrhea. Aspiration of low viscosity solvents can cause chemical pneumonitis which can be fatal.

POTENTIAL HEALTH EFFECTS:

EYE: This product can cause brief and/or minor eye irritation. The expected adverse health effects resulting from an exposure may include redness and possible swelling.

SKIN: This product can cause moderate skin irritation. The expected adverse health effects resulting from an exposure may include redness and swelling. This product is slightly toxic when absorbed through the skin. This product is not expected to cause allergic skin reactions.

INGESTION: This product is slightly toxic when ingested. Ingestion of this product may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Because of the low viscosity of this substance, it can directly enter the lungs if it is swallowed (this is called aspiration). This can occur during the act of swallowing or when vomiting the substance. Once in the lungs, the substance is very difficult to remove and can cause injury to the lungs and death.

INHALATION: This product is minimally toxic when inhaled.

SYMPTOMS OF OVEREXPOSURE: Exposure to high concentrations in the air may result in respiratory irritation. Sings and symptoms may include, but not be limited to, nasal discharge, sore throat, coughing and difficulty in breathing.

POTENTIALLY DGGRAVATED MEDICAL CONDITIONS: Individuals with preexisting diseases of the liver, kidney, red blood cell or central nervous system may have increased susceptibility to the toxicity of excessive exposures.

4.FIRST AID MEASURES

FIRST AID	
IF ON SKIN OR CLOTHING:	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
IF IN EYES:	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
IF SWALLOWED:	• Immediately call a poison control center or doctor. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give any liquid to a person. • Do not give anything by mouth to an unconscious person.
IF INHALED:	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. • Call a poison control center or doctor for further treatment advice.
HOT LINE NUMBER: Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact Prosar at 1-877-250-9291 for emergency medical treatment information. **NOTE TO PHYSICIAN:** If ingested, probable mucosal damage may contraindicate the use of gastric lavage. This product contains a light hydrocarbon liquid; ingestion or subsequent vomiting can result in aspiration of this product, which can cause pneumonitis.	

5. FIRE FIGHTING MEASURES

FLASH POINT: 152°F (66.7^{o}C) (Setaflash Closed Cup)
FLAMMABLE LIMITS: Not available.
EXTINGUISHING MEDIA: Water fog, carbon dioxide, foam, dry chemical

FIRE & EXPLOSION HAZARDS: Liquid evaporates and forms vapor (fumes) which can catch fire and burn with explosive violence. Invisible vapor spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches. Fire hazard is great as liquid temperature rises above 85 degrees F.

FIRE-FIGHTING PROCEDURE: Products of combustion from fires involving this material may be toxic. Avoid breathing smoke and mists. Avoid personnel and equipment contact with fallout and runoff. Minimize the amount of water used for fire fighting. Do not enter any enclosed area without full protective equipment, including self-contained breathing equipment. Contain and isolate runoff and debris for proper disposal. Decontaminate personal protective equipment and fire fighting equipment before reuse.

HAZARDOUS COMBUSTION PRODUCTS: Normal combustion forms carbon dioxide, water vapor and may produce: oxides of nitrogen. Incomplete combustion can product carbon monoxide.

6. ACCIDENTAL RELEASE MEASURES

ACTION TO TAKE FOR SPILLS/LEAKS: FOR SPILLS ON LAND: CONTAINMENT: Avoid runoff into storm sewers and ditches which lead to waterways. Contain spilled liquids with dry sorbents. CLEANUP: Clean up spill immediately. Absorb spill with inert material (such as dry sand or earth), then place in a chemical waste container. Wash area with soap and water. Pick up wash liquid with additional absorbent and place in a chemical waster container. FOR SPILLS IN WATER: CONTAINMENT: This material forms an emulsion in water. Stop or reduce

contamination of any water. Isolate contaminated water. CLEANUP: Clean up spill immediately. Absorb spill with inert material. Remove contaminated water for treatment or disposal.

7. HANDLING AND STORAGE

DO NOT USE OR STORE near flame, sparks or hot surfaces. Use only in well ventilated area. Keep container closed.

PRECAUTIONS TO BE TAKEN IN HANDLING: Keep container closed when not in use. Handle and open container in a manner as to prevent spillage. Do not contaminate water, food or feed by storage, disposal or by cleaning equipment.

PRECAUTIONS TO BE TAKEN IN STORAGE: Store in a cool dry place in original container, out of direct sunlight. Keep container closed when not in use. Do not put concentrate or dilute into food or drink containers. DO not store at temperatures below 32^{o}F. If the product is exposed to temperatures below 32^{o}F, thaw at room temperature to 50^{o}F or warmer and shake gently to unify the product.

STORAGE TEMPERATURE (MIN/MAX): Do not Store below 32^{o}F

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

EYE PROTECTION: Wear goggles or face shield during mixing/loading, cleanup and repair activities.

SKIN PROTECTION: Wear long-sleeved shirt and long pants, socks and chemical-resistant footwear.

HAND PROTECTION: Chemical-resistant gloves, such as barrier laminate or Viton selection category G.

RESPIRATOR REQUIREMENTS: Atmospheric levels should be maintained below the exposure guidelines. When respiratory protection is required, use a NIOSH approved respirator with any R, P, or HE filter.

ADDITIONAL PROTECTIVE MEASURES: Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS:

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove clothing immediately after handling this product. Wash outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

EXPOSURE GUIDELINES: Refer to Section 2.
ENGINEERING CONTROLS: Use this material only in well ventilated areas. Unless ventilation is adequate to keep airborne concentration below recommended exposure standards, approved respiratory protection should be worn.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPARANCE: Pale yellowish clear liquid
ODOR: Mild aromatic
pH: 5.7 (10% v/v)
BULK DENISTY: 7.65 lb/gal (20^{o}C)
FLASH POINT: 152°F (Setaflash Closed Cup)
VISCOSITY: 18.5 cps
CORROSION CHARACTERISTICS: No corrosive
SOLUBILITY: Emulsifiable in water

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable at normal ambient temperatures.

SPECIFIC MATERIALS TO AVOID: None known.

HAZARDOUS DECOMPOSITION PRODUCTS: Normal combustion forms carbon dioxide, water vapor and may produce: oxides of nitrogen. Incomplete combustion can product carbon monoxide.

HAZARDOUS POLYMERIZATION: Not known to occur.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY/IRRITATION STUDIES

Acute Oral LD50 (Rat):	4,733 mg/kg (males); 3,773 mg/kg (females)
Acute Dermal LD50 (Rat):	>2,000 mg/kg
Acute Inhalation LC50 (Rat):	3.1 mg/L (4-hr)
Eye Irritation (Rabbit):	Moderately irritating.
Dermal Irritation (Rabbit):	Moderately irritating.
Dermal Sensitization (Guinea Pig):	Not a skin sensitizer

TOXICITY OF PYRIPROXYFEN TECHNICAL:
SUBCHRONIC: Subchronic oral toxicity studies conducted with Pyriproxyfen Technical in the rat, mouse and dog indicate a low level of toxicity. Effects observed at high dose levels consisted primarily of decreased body weight; increased liver weights; histopathological changes in the liver and kidney; decreased red blood cell counts, hemoglobin and hematocrit; altered blood chemistry parameters; and, at 5000 and 10000 ppmin mice, a decrease in survival rates. The NOELs from these studies were 1000 ppm (149.4 mg/kg/day) in mice, 100 mg/kd/day in dogs and 400 ppm (23.5 mg/kg/day) in rats. In a 4 week inhalation study of Pyriproxyfen Technical in rats, decreased body weight and increased water consumption was observed at 1000 mg/m3. The NOEL in this study was 482 mg/m3. A 21-day dermal toxicity study in rats with Pyriproxyfen Technical did not product any signs of dermal or systemic toxicity at 1000 mg/kg/day.

CHRONIC/CARCINOGENICITY: Pyriproxyfen Technical has been tested in chronic studies with dogs, rats and mice. Dogs exposed to dose levels of 300 mg/kg/day or higher for 52 weeks showed overt clinical signs of toxicity, elevated levels of blood enzymes and liver damage. The NOEL in this study was 100 mg/kg/day. In a 78 week study in mice, dietary levels of 3000 ppm or greater produced gross and histopathological changes in the kidney. The NOWL in this study was 600 ppm. In a 2-year study in rats, dietary levels of 3000 ppm or greater produced decreased body weights in female rats. The NOWL in the rat study was 600 ppm. No oncogenic response was produced in mice or rats.

DEVELOPMENTAL TOXICITY: Tests for developmental toxicity in rats and rabbits were conducted with Pyriproxyfen Technical. In the study conducted with rats, maternal toxicity (mortality, decreased body weight gain and food consumption and clinical signs of toxicity) was obsvered at doses of 300 mg/kg/day and greater. The maternal NOWL was 100 mg/kg/day. A transient increase in skeletal variations was observed in rat fetuses exposed to 300 mg/kg/day and greater. The NOWL for prenatal developmental toxicity was 100 mg/kg/day. An increased incidence of visceral and skeletal variations was observed postnatally at 1000 mg/kg/day. The NOWL for postnatal developmental toxicity was 300 mg/kg/day. In the study conducted with rabbits, maternal toxicity (clinical signs of toxicity including one death, decreased body weight gain and food consumption, and abortions or premature deliveries) was observed in the rabbit fetuses. The NOWL for developmental toxicity in rabbits was 1000 mg/kg/day.

REPRODUCTION: A dietary rat reproduction study was conducted with Pyriproxyfen Technical. Systemic toxicity (reduced body weights, histopathological changes in the liver and kidney, and increased liver weight) was produced at 5000 ppm. The systemic NOEL was 1000 ppm. No effects on reproduction were produced even at 5000 ppm, the highest dose tested.

MUTAGENICITY: Pyriproxyfen Technical was negative in the following tests for mutagenicity; Ames Assay with and without S9, unscheduled DNA synthesis in HeLa S3 cells, in vitro gene mutation in V79 Chinese hamster cells, and in vitro chromosomal aberration in Chinese hamster ovary cells.

TOXICITY OF OTHER INGREDIENTS: This product contains a solvent. Solvents, when inhaled, can cause nasal and respiratory irritation and central nervous system effects including dizziness, weakness, fatigue, nausea,

headache and possibly unconsciousness and even death. Ingestion of solvents can cause gastrointestinal irritation. Nausea, vomiting and diarrhea. Prolonged or repeated dermal exposures may cause drying, scaling and even blistering of the skin. Aspiration of low viscosity products can cause chemical pneumonitis which can be fatal. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Symptoms include fatigue, concentration difficulties, anxiety, depression. Rapid mood swings and short-term memory loss. The reports are not clear with regard to the types of solvents that may cause these symptoms, and there is controversy amoung scientists to shether the condition exists or is caused by this type of product. Since many other diseases cause some or all of these conditions, a doctor should be consulted if hemolytic anemia, damage to the kidneys, cataracts, and in infants, brain damage. There is limited evidence of fetal and maternal toxicity from exposure to naphthalene.

Chronic (long-term) exposure of workers and rodents to naphthalene has been reported to cause cataracts and damage to the retina. Lesions in the kidneys and thymus, signs of anemia, and reduced spleen weights have been observed in rats and mice chronically exposed via gavage. A Nation Toxicology Program (NTP) report stats that lifetime inhalation exposure to naphehalen resulted in increase in tumors of the nose in rats. In another NTP study, lifetime inhalation exposure to naphthalene increased lung tumors in female mice. The relevance of the rodent findings to humans is unknown. Naphthalene has been listed by the International Agency for Research on Cancer (IARC) as possibly carcinogenic to humans (Group 2B).

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL HAZARDS: This pesticide is toxic to fish, aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwater or rinsate. Avoid direct application and/or spray drift to bee hives.

AVIAN TOXICITY: Pyriproxyfen Technical is practically non-toxic to avian species. Test results includes;
Oral LD_{50} (mallard duck) > 2000 mg/kg
Oral LD_{50} (Bobwhite quail): > 2000 mg/kg
Dietary LC_{50} (mallard duck): > 5200 ppm
Dietary LC_{50} (bobwhite guail): > 5200 ppm
Reproduction (bobwhite quail): NOEC 600 ppm
Reproduction (Mallard duck): NOEC 600 ppm

AQUATIC ORGANISM TOXICITY: Pyriproxyfen Technical is moderately to highly toxic to fish and moderately to very highly toxic to aquatic invertebrate species. Test results include:
Freshwater species:
LC_{50} (96-h) Bluegill Sunfish: > 270 µg/l
LC_{50} (96-h) Rainbow Trout: > 325 µg/l
LC_{50} (21-d) Rainbow Trout: 90 µg/l
LC_{50} (96-h) Carp: 450 µg/l
LC_{50} (96-h) Killifish: 2660 µg/l
EC_{50} (48-h) Daphnia magna: 400 µg/l
MATC (21-d) Daphenia magna : 20 ppt
MATC (Early life Cycle) Rainbow Trout: 5.4 µg/l

Estuarine species:
LC_{50} (96-h) Sheepshead Minnow: > 1.02 ppm
LC_{50} (96-h) Mysid Shrimp: 65 ppb
EC_{50} (96-h) Oyster Shell Deposition: 92 ppb

OTHER NON-TARGET ORGANISM TOXICITY: Pyriproxyfen Technical is practically non-toxic to bees. The acute contact LC_{50} in bees was greater than 100 µg/bee.

13. DISPOSAL CONSIDERATIONS

PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL: Dispose of product containers, waste containers, and residues according to label instructions and local, state, and federal health and environmental regulations.

14. TRANSPORT INFORMATION

DOT CLASSIFICATION:

Non-bulk: Not regulated

Bulk (>119 gallons): NA1993, Combustible liquid, N.O.S. (Naphthalene), PG III*
* For shipments **>** 267 gallons RQ is required in the shipping description.

INTERNATIONAL TRANSPORTATION:

IMO (vessel): UN 3082, Environmentally Hazardous Substances, Liquid, N.O.S. (Pyriproxyfen), 9, PGIII, Marine Pollutant

IATA (air): UN 3082, Environmentally Hazardous Substances, Liquid, N.O.S. (Pyriproxyfen), 9, PGIII, Marine Pollutant

15. REGULATORY INFORMATION

SARA TITLE III CLASSIFICATION:

Section 302:	Not applicable.
Section 311/312:	Acute health hazard (immediate) Chronic health hazard (delayed) Fire hazard
Section 313:	Naphthalene (4-6%) CAS#: 91-20-3

CA PROPOSITION 65: This product contains a material (naphthalene) known to the State of California to cause cancer.
CERCLA RQ: Naphthalene RQ=100 lbs. (267 gallons of product)
RCRA CLASSIFICATION: Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.
TSCA STATUS: The ingredients of this product are listed on the TSCA inventory or are exempt.

16. OTHER INFORMATION

NFPA HAZARD RATINGS	**NFPA**		
HEALTH:	2	0	MINIMAL
FLAMMABILITY:	2	1	SLIGHT
REACTIVITY:	0	2	MODERATE
		3	HIGH
		4	SEVERE

MSDS DATE: 2-28-12.

The information herein is given in good faith, but no warrant, express or implied, is made. Consult Makhteshim Agan of North America, Inc. for further information.