1. PRODUCTS AND COMPANY IDENTIFICATION

Product Name: FANTEX HR
Chemical Name: Polyphenol5-chloro-2-methoxy(2,4-clichlorophenoxy)carbamate in aqueous carrier.
Intended Use: Antimicrobial Agent
Manufacturer/Supplier: ISCA UK LIMITED
Tel: +44 1495 200747
E-Mail: enquiries@iscauk.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
Signal Word: Warning
Physical Form: Liquid
Colour: Clear/Translucent
Health: Contact causes eye irritation. Contact causes skin irritation.
Physical Hazard: Refer to MSDS Section 7 for Dust Explosion information
OSHA Hazardous Substance: This material is classified as hazardous under OSHA regulations.

Potential Health Effects: Very toxic to aquatic organisms. Target Organ Effect: Animal studies revealed the liver is a target organ at high doses; however, liver injury is not likely to occur in humans because of the very low human exposures and the differences in liver responses between some species and humans. The U.S.Food and Drug Administration have concluded lower doses are safe for human consumption, See Section 11.
Primary Route(s) of Entry: Ingestion, Skin, Inhalation, and Eyes.

3. COMPOSITION/INFORMATION ON INGREDIENT HAZARDOUS COMPONENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS Number</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyphenol5-chloro-2-methoxy(2,4-clichlorophenoxy)carbamate</td>
<td>27083-27-8</td>
<td>&lt;20</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>&gt;80</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

Eye: In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Skin: Wash off immediately with soap and plenty of water. Get medical attention if irritation occurs.

Inhalation: Remove to fresh air, if not breathing give artificial respiration. If breathing is difficult, give oxygen and get immediate medical attention.

Ingestion: Do not induce vomiting. If vomiting occurs naturally, have casualty lean forward to reduce the risk of aspiration. Seek medical immediately.
5. FIRE FIGHTING MEASURES

Fire Fighting Measures: Standard procedure for chemical fires.
Suitable Extinguishing Media: Carbon dioxide, dry chemical, foam or water mist.
Fire Fighting Equipment: Wear self-contained breathing apparatus and protective suit.
Unusual hazards: The product can form an explosive dust/air mixture. For further information, see section 7 Explosion Hazards.
Hazardous Combustion: Burning may produce toxic combustion products.

6. ACCIDENTAL RELEASE MEASURES

Cleanup Instructions: Use suitable absorbent granules, sweep up and shovel into suitable containers for disposal. Avoid dust formation. Wear suitable protective equipment. Should not be released into the environment.

7. HANDLING AND STORAGE

Handling: As with all industrial chemicals, use good industrial practices when handling. Avoid eye, skin, and clothing contact. Do not inhale. Do not taste or swallow. Use only with adequate ventilation.
Storage: Keep containers tightly closed in a cool, well-ventilated place.
Explosion Hazards: Combustible powder

Avoid creating dusty conditions.

Grounding is required when emptying into a conductive container.

When flammable solvents are present, the container must be inverted or the system otherwise designed to prevent or contain an explosion. Seek expert advice. In addition, for products package in fused-lined (coated) fiber drums, fiber drums with conductive liners. Steel pails and Type “C” FIBC (bulk bags), or other conductive the following instructions also apply:

Always ground this package before emptying. The user is responsible for designing the system to handle solid and ensuring proper training of employees in the system’s use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines: There are no OSHA or ACGIH exposure guidelines available for component(s) in this product.

Personal Protective Equipment: Eye/Face Protection: Wear safely glasses or goggles to protect against any particulates.
Skin Protection: Wear chemical resistant gloves and protective clothing.
Respiratory Protection: Use NIOSH approved respirator as needed to mitigate exposure.
Engineering Controls: Work in well-ventilated areas. Do not breathe dust.
9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Form: Liquid
Color: Clear/Translucent
Freezing/Melting Point: -4+2°C (24.8 – 35.6°F)
Solubility in water: 100% @ 20°C (68°F)
Vapor Density: Not applicable
Vapor Pressure: 7x10(exp-4) Pa
Density: Not determined
Specific Gravity: Not applicable
PH: Not determined
Present Volatile: Not determined
VOC: 3.01%
Partition Coefficient (Octanol/Water): 4.8 log P
Decomposition Temperature: >280°C (536°F)
Flash Point: Not applicable
Test Method (for Flash Point): Not applicable

10. STABILITY AND REACTIVITY

Stability: Stable
Condition to Avoid: Avoid static discharge
Incompatibility: Strong-oxidizing agents, strong acids, strong bases.
Hazardous Decomposition: No decomposition expected under normal storage conditions.
Possibility of Hazardous Reactions: None expected

11. TOXICOLOGICAL INFORMATION

Acute Oral Toxicity: >LD50 5000 mg/KG (Rats)
Acute Dermal Toxicity: >LD50 6000 mg/KG (Rats)
Acute Inhalation Toxicity: >140mg/m3 (Rats)
Eye Irritation: (Rabbits) Irritant
Skin Irritation: (Rabbits) Irritant
Skin sensitization: In guinea pigs, not a dermal sensitizer by maximization test or Buehler (non-adjuvant) test. RIPT (Humans) – Not a primary irritant, fatiguing Agent or sensitizer. Photo toxicity (Humans): Not photo toxic by dermal route.

PHOTO ALLERGY (HUMANS): Not a photosensitize by dermal route.
CARCINOGENICITY (IARC; NTP; OSHA; ACGIH): None of the components in this product at concentrations greater than IARC, NTP, OSHA or ACGIH as a carcinogen lists 0.1%.
CARCINOGENICITY STUDIES: Chronic: The primary target organ after oral dosing is the liver in rats and mice and the kidney in hamsters. The NOEL in rats is 52 (males) and 67 (females) mg/kg/d, and in hamsters 75 mg/kg/d.
CARCINOGENICITY: Rat and hamster chronic studies did not reveal any pre-neoplastic or neoplastic effects of oral dosing. A carcinogen city studies in mice fed at 10 up to 200 mg/kg/d revealed a significant incidence of tumors only in the liver of mice exposed to 30 mg/kg/d and higher. The NOEL of 10 mg/kg/d is over 600 times higher than relevant human exposure levels and, according to the US Food and Drug Administration, provides sufficient margin of safety for human use.
REPRODUCTIVE TOXICITY: Rat fertility and reproduction index values over two generations were not adversely affected at 150 mg/kg/d, the highest dose given in the diet. For offspring (F1 pups), the NOEL is 50 mg/kg/d based on increased (p<0.05) body weight.
TERATOGENICITY: Rats showed delayed fetal ossification at 150 mg/kg/day (gestation days 6 through 15), developmental effects did not occur; maternal and fetal NOEL=50 mg/kg/day.
Mice showed maternal effects and delayed fetal ossification at 150 mg/kg/day (gestation days 6 through 15), maternal and fetal NOEL=25 mg/kg/day.
Rabbits showed only maternal body weight and food intake reductions at 50 mg/kg/ day (gestation days 6 through 18), maternal NOEL=50 mg/kg/day, fetal NOEL=150 mg/
12. ECOLOGICAL INFORMATION

TOXICITY TO FISH: BLUEGILL: LC50, 840ug/L (96hr), NOEC 560ug/L
FATHEAD MINNOW: LC50, 260ug/L (96hr); NOEL 100ug/L; LC100, 560ug/L (24hr)
RAINBOW TROUT: LCS0, 350ug/L (96hr)
RAINBOW TROUT, EARLY LIFE STAGE: LOEC 71ug/L; NOEL 34ug/L
TOXICITY TO INVERTEBRATES: Daphnia magna: LC50, 390ug/L (48hr); NOEC100ug/L
DAPHNIA MAGNA (21 DAY CHRONIC): LOEC 200ug/L; NOEC 40ug/L
CERIODAPHNIA DUBIA: EC50, 130ug/L
TOXICITY TO ALGAE: NOEC 0.46ug/L
TOXICITY TO EARTHWORMS: > 1030ug/Kg LC50
TOXICITY TO PLANTS: Cucumber seedlings NOEC>1000ug/Kg
TOXICITY TO BIRDS: Bobwhite quail (Oral acute): LD50 862 mg/Kg
MALLARD DUCK: LD50>2150mg/Kg
TOXICITY TO SEWAGE BACTERIA: Not determined
ACTIVATED SLUDGE RESPIRATION INHIBITION: Inhibition (IC50)@20mg/l (3HR)
NITRIFICATION INHIBITION: IC20=11.4 mg/l
BIOCHEMICAL OXYGEN DEMAND (BOD): Not determined
CHEMICAL OXYGEN DEMAND (COD): Not determined
TOTAL OXYGEN DEMAND (TOD): Not determined
BIODEGRADABILITY: Not readily biodegradable
Aerobic soil showed primary biodegradation with half-life 17-35 days.
Secondary Wastewater Treatment (activated sludge):95% removal of influent concentrations.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: Dispose in accordance with local. State. Provincial and federal regulations
14. TRANSPORT INFORMATION

**U.S. Department of Transportation (DOT):**

**REGULATED IN BULK QUANTITIES ONLY:** Yes. Single packages greater than or equal to 880 lbs or 119 gallons are regulated.

**PROPER SHIPPING NAME:** Environmentally hazardous substances, solid, n.o.s.
**TECHNICAL SHIPPING NAME:** (FANTEX-HR)
**HAZARD CLASS:** 9
**ID NUMBER:** UN3070
**PACKING GROUP:** III
**MARINE POLLUTANT:** Yes

**International Maritime Dangerous Goods (IMDG):**

**PROPER SHIPPING NAME:** Environmentally hazardous substances, solid, n.o.s.
**TECHNICAL SHIPPING NAME:** (FANTEX-HR)
**HAZARD CLASS:** 9
**ID NUMBER:** UN3077
**PACKING GROUP:** III
**MARINE POLLUTANT:** Yes

**International Air Transportation Authority (IATA):**

**REGULATED IN BULK QUANTITIES ONLY:** Yes. Single packages greater than or equal to 880 lbs or 119 gallons are regulated.

**TECHNICAL SHIPPING NAME:** (FANTEX-HR)
**HAZARD CLASS:** 9
**ID NUMBER:** UN3077
**PACKING GROUP:** III
**MARINE POLLUTANT:** Yes

15. REGULATORY INFORMATION

**RISK AND SAFETY PHRASES:** R36/38, S2, S24/25, S39

**FEDERAL REGULATIONS**

**OSHA HAZARDOUS SUBSTANCE:** This material is classified as hazardous under OSHA regulations

**CLEAN AIR ACT-VOLATILE ORGANIC COMPOUNDS (VOC):** This product does not contain any SOCMI Intermediate or Final Volatile Organic Compounds (VOC), as defined by the U.S. Clean Air Act Section 111(40 CFR 60.489).

**CLEAN AIR ACT-OZONE DEPLETING SUBSTANCES (ODS):** This product neither contains, or was manufactured with, a Class I or Class II ozone depleting substance (ODS), as defined by the U.S. Clean Air Act Section 602(40 CFR 82, Subpt A, App, A+B).

**CLEAN WATER ACT-PRIORITY POLLUTANTS (PP):** This product does not contain any priority pollutants listed by under the U.S. Clean Water Act Section 307(2)(1) priority Pollutant List (40 CFR 401.15).

**RESOURCE CONSERVATION AND RECOVERY ACT (RCRA):**

**SARA SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (EHS):** Not a hazardous waste under RCRA (40 CFA 261.21).

**SARA SECTION 304 CERCLE HAZARDOUS SUBSTANCES (EHS):** This product does not contain any components regulated under Section 304(40 CFR 355) as Extremely Hazardous Substances.

**SARA SECTION 311/312 HAZARD COMMUNICATION STANDARD (HCS):** This product is not regulated under Section 311/312 HCS (40 CFR 370).

**SARA SECTION 313 TOXIC CHEMICAL LIST (TCL):** This product does not contain any component(s) listed on the Section 313 Toxic Chemical List.

**TSCA SECTION 8(B) INVENTORY STATUS:** All component(s) comprising this product are either exempt or listed on the TSCA inventory.

**TSCA SECTIONS 5(E) CONSENT ORDERS:** This product is not subject to a Section 5(e) Consent Order.

**TSCA SIGNIFICANT NEW USE RULE (SNUR):** This product is not subject to a Significant New Use Rule (SNUR).

**TSCA SECTION 5(F) CONSENT ORDERS:** This product is not subject to a Section 5(f)/6(a) rule.

**TSCA SECTION 12(B) EXPORT NOTIFICATION:** This product does not contain any component(s) that are subject to a Section 12(b) Export Notification.
FDA STATUS: Regulated by FDA as an Active Pharmaceutical Ingredient (API).

STATE REGULATIONS

CALIFORNIA PROPOSITION 65: This product does not contain any components currently on the California list of Known Carcinogens and Reproductive Toxins.

Pennsylvania Right-to-Know: This product does not contain any components currently on the Pennsylvania Right-To-Know list of hazardous chemicals.

INTERNATIONAL REGULATIONS

Chemical Weapons Convention (CWC): This product does not contain any component(s) listed under the Chemical Weapons Convention Schedule of Chemicals.

DOMESTIC SUBSTANCE LIST (DEL) STATUS: All components are listed on the DSL.

16. OTHER INFORMATION

DISCLAIMER: The information contained herein is based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to such data or information. The user is responsible for determining whether the product is suitable for its intended conditions of use.