MATERIAL SAFETY DATA SHEET (MSDS)

POLYFERT 19:19:19

Section 1. Chemical Product and Company Identification

PRODUCT: POLYFERT 19:19:19 SYNONYMS: Not applicable. CHEMICAL NAME: Not applicable. CHEMICAL FORMULA: Not applicable.

MATERIAL USES: Agricultural industry: Fertilizer.

COMPANY IDENTIFICATION:

Xiamen Topusing Imp. & Exp. Co., Ltd.

7H, Changan Building, Lvling Road, Xiamen, China

For information call: 0086-592-5538032

Section 2. Composition, Information on Ingredients

Appearance: blue or green crystal

Total N: 19%min

P205: 19% K20: 19% Mg0: 1%

Insolubles in water: 0.2%max

Section 3. Hazards Identification

POTENTIAL ACUTE HEALTH EFFECTS

This product may irritate eyes and skin upon prolonged or repeated contact (salt effects). Over-exposure by inhalation may cause respiratory tract irritation. Ingestion of this substance may produce irritation of the gastro-intestinal tract, characterized by burning and diarrhea.

POTENTIAL CHRONIC HEALTH EFFECTS

NONE by ACGIH, EPA, LARC, NTP, OSHA.
CARCINOGENIC EFFECTS: NONE by ACGIH EPA

CARCINOGENIC EFFECTS: NONE by ACGIH, EPA, IARC, NTP, OSHA.
MUTAGENIC EFFECTS: NONE by ACGIH, EPA, IARC, NTP, OSHA.
TERATOGENIC EFFECTS: NONE by ACGIH, EPA, IARC, NTP, OSHA.
There is no known effect from chronic exposure to this product.

Section 4. First Aid Measures

Inhalation: Move victim away from dusty environments and to fresh air. OBTAIN MEDICAL ADVICE if symptoms persist.



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Skin Contact: Flush skin and hair thoroughly with soap and water. If irritation occurs seek medical attention.

Ingestion: Give 1 to 2 glasses of water (200 to 500 ml) to dilute material. Do not induce vomiting. Vomiting should only be induced under the direction of a physician or Poison control information centre. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing of vomitus, rinse mouth and administer more water. OBTAIN MEDICAL ADVICE. Do not induce vomiting or give anything by mouth to an unconscious person. Eye Contact: Flush eyes with running water for 20 minutes. Hold eyelids open during flushing. If irritation persists seek Medical Attention.

Section 5. Fire and Explosion Data

THE PRODUCT IS Non-flammable. AUTO-IGNITION: Not applicable. TEMPERATURE: Not applicable. FLASH POINT: Not applicable.

FLAMMABILITY LIMITS: Not applicable.

PRODUCTS OF COMBUSTION

Material will not burn. Undergoes thermal decomposition at elevated temperatures to release toxic and combustible gases: ammonia, nitrogen oxides, phosphorous oxides.

FIRE HAZARD IN THE PRESENCE OF VARIOUS SUBSTANCES

Not applicable.

EXPLOSION HAZARD IN THE PRESENCE OF VARIOUS SUBSTANCES

This product is non-explosive.

FIRE FIGHTING MEDIA AND INSTRUCTIONS

Material will not burn. Undergoes thermal decomposition at elevated temperatures to release toxic and combustible gases. Use extinguishing media suitable for surrounding materials. SPECIAL REMARKS ON EXPLOSION HAZARDS

Non combustible. Flammable/toxic gases will form at elevated temperatures $(>190~^{\circ}C)$ by thermal decomposition (ammonia, nitrogen oxides, phosphorus oxides). A self contained breathing apparatus should be used to avoid inhalation of toxic fumes.

SPECIAL REMARKS ON FIRE HAZARDS

No additional remark.

Section 6. Accidental Release Measures

SMALL SPILL

Use appropriate tools to put the spilled solid in a suitable container for intended use or disposal.

LARGE SPILL

In the event of a spill, prevent additional discharge of material, if possible to do so without hazard. Prevent spills from entering sewers, watercourses, wells, etc. Product will promote algae growth which may degrade water quality and taste. Notify downstream water users. Will dissolve and disperse in water. Reclaiming material may not be viable. If possible, recover and place material in suitable containers for recycle, reuse, or disposal. Ensure disposal complies with government requirements and local regulations.



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Section 7. Handling And Storage

PRECAUTIONS

Avoid contact with skin and eyes. After handling, always wash hands thoroughly with soap and water. Do not breathe dust. Keep away from food, drink and animal feed. Avoid contact with incompatible substances. Keep out of reach of children.

STORAGE Store in a dry, cool and well ventilated area.

Section 8. Exposure Controls/Personal Protection

ENGINEERING CONTROLS

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, use ventilation to keep exposure to airborne contaminants below the exposure limit.

PERSONAL PROTECTION

The selection of personal protective equipment varies, depending upon conditions of use. Wear appropriate respiratory protection for dust/mist when ventilation is inadequate. A filtering facepiece dust mask is recommended for most applications if respiratory protection is needed. Where skin and eye contact may occur as a result of brief periodic exposures, wear long sleeved clothing, coveralls, chemical resistant gloves, and safety glasses with side shields. A respiratory protection program that meets OSHA 29 CFR 1910. 134 requirements must be followed whenever workplace conditions warrant a respirator's use.

PERSONAL PROTECTION IN CASE OF LARGE RELEASE No additional information.

EXPOSURE LIMITS

OSHA PEL: 15 mg/m3 as total dust and 5 mg/m3 for the respirable fraction for Particulates Not Otherwise Regulated (nuisance particulates). 29 CFR 1910. 1000 Table Z-1. Federal, State or Provincial exposure limits may vary by jurisdiction. Consult local authorities for acceptable exposure limits in your area.

Section 9. Physical and Chemical Properties

PHYSICAL STATE AND APPEARANCE Solid.

MOLECULAR WEIGHT Not applicable.

ODOR Odorless.

BOILING POINT Decomposes.

MELTING POINT Variable depending on components.

TASTE Acrid. (Slight.)

CRITICAL TEMPERATURE Not available.

VOLATILITY Not applicable.

SPECIFIC GRAVITY g/cc Not applicable

SOLUBILITY Easily soluble in hot water. Soluble in cold water.

DISPERSION PROPERTIES See solubility in water.

BULK DENSITY kg/m3; lbs/ft3 Variable based on composition.



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VAPOR PRESSURE VAPOR DENSITY Not applicable. Not applicable.

Section 10. Stability and Reactivity Data

STABILITY The product is stable.

INSTABILITY TEMPERATURE Not available.

CONDITIONS OF INSTABILITY No additional remark.

INCOMPATABILITY WITH VARIOUS SUBSTANCES

Very slightly reactive with metals (may cause slow corrosion) or with moisture (may cake). CORROSIVITY

Corrosive to aluminum, zinc, and copper. Slightly corrosive to mild steel and 304 stainless steel. Non-corrosive to 316 stainless steel.

SPECIAL REMARKS ON REACTIVITY

Avoid contact with moisture. Product may cake.

SPECIAL REMARKS ON CORROSIVITY

Incompatible with copper alloys. Corrosive to brass. Corrosive to ferrous metals and alloys. Contact your sales representative or a metallurgical specialist to ensure compatability with system equipment.

Section 11. Toxicological Information

SIGNIFICANT ROUTES OF EXPOSURE Ingestion. Inhalation.

TOXICITY TO ANIMALS See Section II.

SPECIAL REMARKS ON TOXICITY TO ANIMALS

Very low toxicity for humans or animals. Will release ammonium ions. Ammonia is a toxic hazard to fish. May be harmful to livestock and wildlife if ingested. Clean up all spilled material, especially where bulk fertilizer loading of equipment occurs. Will slowly release ammonia and degrade to nitrate. Ammonia is a toxic hazard to fish. However, ammonia release is slow making urea much less toxic than ammonium salts. Non-persistent. Noncumulative when applied using normal agricultural practises. The product itself and its products of degradation are not harmful under normal conditions of careful and responsible use. U.S. D.O.T.: This material is NOT listed as a Marine pollutant.

OTHER EFFECTS ON HUMANS

Our data base contains no additional remark on the toxicity of this product SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS

No additional remark.

SPECIAL REMARKS ON OTHER EFFECTS ON HUMANS

No additional remark.

Section 12. Ecological Information

ECOTOXICITY Non-persistent. Non-cumulative when applied using normal agricultural practises. Very low toxicity for humans or animals. Will release ammonium ions. Ammonia is a toxic hazard to fish. Avoid spills or release to watercourses.

BOD and COD Not available.

PRODUCTS OF DEGRADATION Nitrogen oxides (NO, NO2), phosphates

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TOXICITY OF THE PRODUCTS OF DEGRADATION

The products of biodegradation are not harmful under normal conditions of slow metabolic release.

SPECIAL REMARKS ON THE PRODUCTS OF DEGRADATION

Product will promote algae growth which may degrade water quality and taste. Notify downstream water users. Will dissolve and disperse in water. Reclaiming material may not be viable.

Section 13. Disposal Considerations

WASTE DISPOSAL OR RECYCLING

Recover and place material in a suitable container for intended use or disposal. Ensure disposal complies with government requirements and local regulations.

Section 14. Transport Information

IMDG CLASSIFICATION

Not controlled under IMDG

PIN and Shipping Name Not applicable.

SPECIAL PROVISIONS FOR TRANSPORT No additional remark.

Section 15. Other Regulatory Information and Pictograms

OTHER REGULATIONS

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA): This product is on the Domestic Substances List (DSL), and acceptable for use under the provisions of CEPA. TSCA (Toxic Substance Control Act): This product's components are listed on the TSCA Inventory. This product is not considered as a priority pollutant as regulated under the Clean Water Act. This product is not subject to the TRI reporting requirements of EPCRA Sec 313 when used as intended for agricultural purposes.

OTHER CLASSIFICATIONS

HCS (U.S.A.) Not controlled under the HCS (United States).

Not controlled under DSCL (Europe).

Section 16. Other Information

OTHER SPECIAL CONSIDERATIONS

Not applicable.