

MATERIAL SAFETY DATA SHEET

This 16-point Material Safety Data Sheet (MSDS) is prepared for a custom-blended, 100% water-soluble mixed fertilizer **SUJALA DRIP** (19:19:19) comprising **Potassium Nitrate, Potassium Sulphate, Mono Ammonium Phosphate and Urea.**

1. IDENTIFICATION

- **Product Name:** 100% Water-Soluble Mixed Fertilizer Blend
- **Ingredients:** Potassium Nitrate, Potassium Sulphate, Mono Ammonium Phosphate, and Urea.
- **Product Use:** Agricultural fertilizer for soil application, fertigation, and foliar spray.
- **Manufacturer/Supplier:** [Insert Company Name, Address, and Emergency Contact Details]

2. HAZARD IDENTIFICATION

- **Classification (GHS):**
 - Oxidizing solids (Category 3) — *due to Potassium Nitrate content*
 - Serious eye damage/eye irritation (Category 2A)
 - Acute toxicity (Oral, Category 4) — *if swallowed in large quantities*
- **Signal Word:** Warning
- **Hazard Statements:**
 - H272: May intensify fire; oxidizer.
 - H319: Causes serious eye irritation.
 - H335: May cause respiratory irritation.
- **Precautionary Statements:**
 - P210: Keep away from heat, sparks, open flames, and hot surfaces. No smoking.
 - P261: Avoid breathing dust.
 - P280: Wear protective gloves/eye protection/face protection.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Component	Chemical Formula	CAS Number	Approximate Proportion (%)
Potassium Nitrate	KNO ₃	7757-79-1	Proprietary Blend (16.3%)
Potassium Sulphate	K ₂ SO ₄	7778-80-4	Proprietary Blend (23.8%)

Chemical Component	Chemical Formula	CAS Number	Approximate Proportion (%)
Mono Ammonium Phosphate	$\text{NH}_4\text{H}_2\text{PO}_4$	7722-76-1	Proprietary Blend (31.2%)
Urea	NH_2CONH_2	57-13-6	Proprietary Blend (28.7%)

4. FIRST-AID MEASURES

- **Inhalation:** Remove victim to fresh air. If not breathing, give artificial respiration. Get medical attention if respiratory symptoms persist.
- **Skin Contact:** Wash thoroughly with soap and water. Remove contaminated clothing. Seek medical attention if skin irritation develops.
- **Eye Contact:** Immediately flush eyes with plenty of clean water for at least 15 minutes, lifting upper and lower eyelids. Remove contact lenses if present. Seek immediate medical attention.
- **Ingestion:** Rinse mouth with water. Do NOT induce vomiting unless directed by medical personnel. Never give anything by mouth to an unconscious person. Seek medical attention.

5. FIRE-FIGHTING MEASURES

- **Extinguishing Media:** Use abundant water. Do not use dry chemical or carbon dioxide extinguishers that smother oxidizers.
- **Specific Hazards:** Contains an oxidizer (Potassium Nitrate). May intensify fire. Under intense heat, the product can decompose to release toxic and irritating fumes (e.g., nitrogen oxides, sulfur oxides, ammonia).
- **Protective Equipment:** Wear self-contained breathing apparatus (SCBA) and full protective gear for firefighting.

6. ACCIDENTAL RELEASE MEASURES

- **Personal Precautions:** Use appropriate personal protective equipment (PPE). Avoid dust formation and breathing dust. Keep unnecessary personnel away.
- **Environmental Precautions:** Prevent large quantities from entering waterways, sewers, or drains.
- **Clean-Up Methods:** Sweep or shovel spilled material carefully. Collect in clean, dry containers for recovery or disposal. Avoid mixing with combustible materials, organic matter, or reducing agents.

7. HANDLING AND STORAGE

- **Handling:** Avoid contact with skin and eyes. Prevent accumulation of airborne dust. Use with adequate ventilation. Wash hands thoroughly after handling.
- **Storage:** Store in a cool, dry, well-ventilated area away from direct sunlight, moisture, combustible materials, organic chemicals, acids, and reducing agents. Keep containers tightly closed.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

- **Engineering Controls:** Use local exhaust ventilation or other engineering controls to keep airborne dust concentrations below exposure limits.
- **Personal Protective Equipment (PPE):**
 - **Eye/Face:** Safety goggles or safety glasses with side shields.
 - **Skin:** Chemical-resistant gloves and protective work clothing (long-sleeved shirts/pants).
 - **Respiratory:** Use a NIOSH-approved dust respirator if dust levels exceed permissible limits.

9. PHYSICAL AND CHEMICAL PROPERTIES

- **Appearance:** Crystalline powder or granular mix
- **Color:** White to off-white (or tinted)
- **Odour:** Odourless to mild ammoniacal hint
- **pH (1% solution):** Moderately acidic to neutral (approx. 4.5 – 6.5 due to acidic phosphate salts)
- **Solubility:** 100% water-soluble
- **Melting Point:** Decomposes upon heating before melting
- **Flammability:** Non-flammable (but acts as an oxidizer)

10. STABILITY AND REACTIVITY

- **Reactivity:** Oxidizer; contact with combustible or organic materials may cause fire.
- **Chemical Stability:** Stable under normal conditions of storage and handling.
- **Possibility of Hazardous Reactions:** Reacts with strong bases to release ammonia gas.
- **Incompatible Materials:** Strong reducing agents, strong acids, combustible materials, organic substances, and powdered metals.
- **Hazardous Decomposition Products:** Nitrogen oxides (NO_x), Sulfur oxides (SO_x), ammonia, and phosphorus oxides.

11. TOXICOLOGICAL INFORMATION

- **Acute Toxicity:** Low toxicity under normal handling conditions, though high oral doses can cause gastrointestinal irritation.
- **Skin Corrosion/Irritation:** Prolonged contact may cause mild skin irritation.
- **Serious Eye Damage/Irritation:** Causes serious eye irritation.
- **Chronic Effects:** Inhalation of high dust concentrations may cause irritation of the respiratory tract. High systemic nitrate absorption can rarely lead to methemoglobinemia.

12. ECOLOGICAL INFORMATION

- **Ecotoxicity:** Low acute toxicity to aquatic life, but high concentrations may cause algal blooms (eutrophication) due to high nitrogen and phosphorus content.
- **Mobility:** Highly mobile in soils due to complete water solubility; nitrates and sulfates can leach into groundwater if over-applied.
- **Persistence and Degradability:** Readily dissociates into plant nutrient ions (K^+ , NH_4^+ , NO_3^- , SO_4^{2-} , $H_2PO_4^-$).

13. DISPOSAL CONSIDERATIONS

- **Waste Treatment:** Do not dispose of waste into sewer systems or open bodies of water.
- **Method:** Dispose of in accordance with local, state, and federal environmental regulations. Uncontaminated product can often be applied as a fertilizer to agricultural land.

14. TRANSPORT INFORMATION

- **UN Number:** UN1477 (Applicable due to Potassium Nitrate content under mixing classification rules)
- **Proper Shipping Name:** NITRATES, INORGANIC, N.O.S. (Contains Potassium Nitrate)
- **Hazard Class:** 5.1 (Oxidizing substances)
- **Packing Group:** III
- **Marine Pollutant:** No

15. REGULATORY INFORMATION

- **Inventories:** Components are listed on major chemical inventories (TSCA, EINECS, DSL).
- **SARA Title III / CERCLA:** Not heavily restricted unless threshold quantities are breached. Check local regional agricultural chemical governance and explosive precursor regulations where applicable.

16. OTHER INFORMATION

- **Disclaimer:** The information provided in this Material Safety Data Sheet is correct to the best of our knowledge at the date of its publication. It is designed only as guidance for safe handling, use, processing, storage, transportation, disposal, and emergency response.