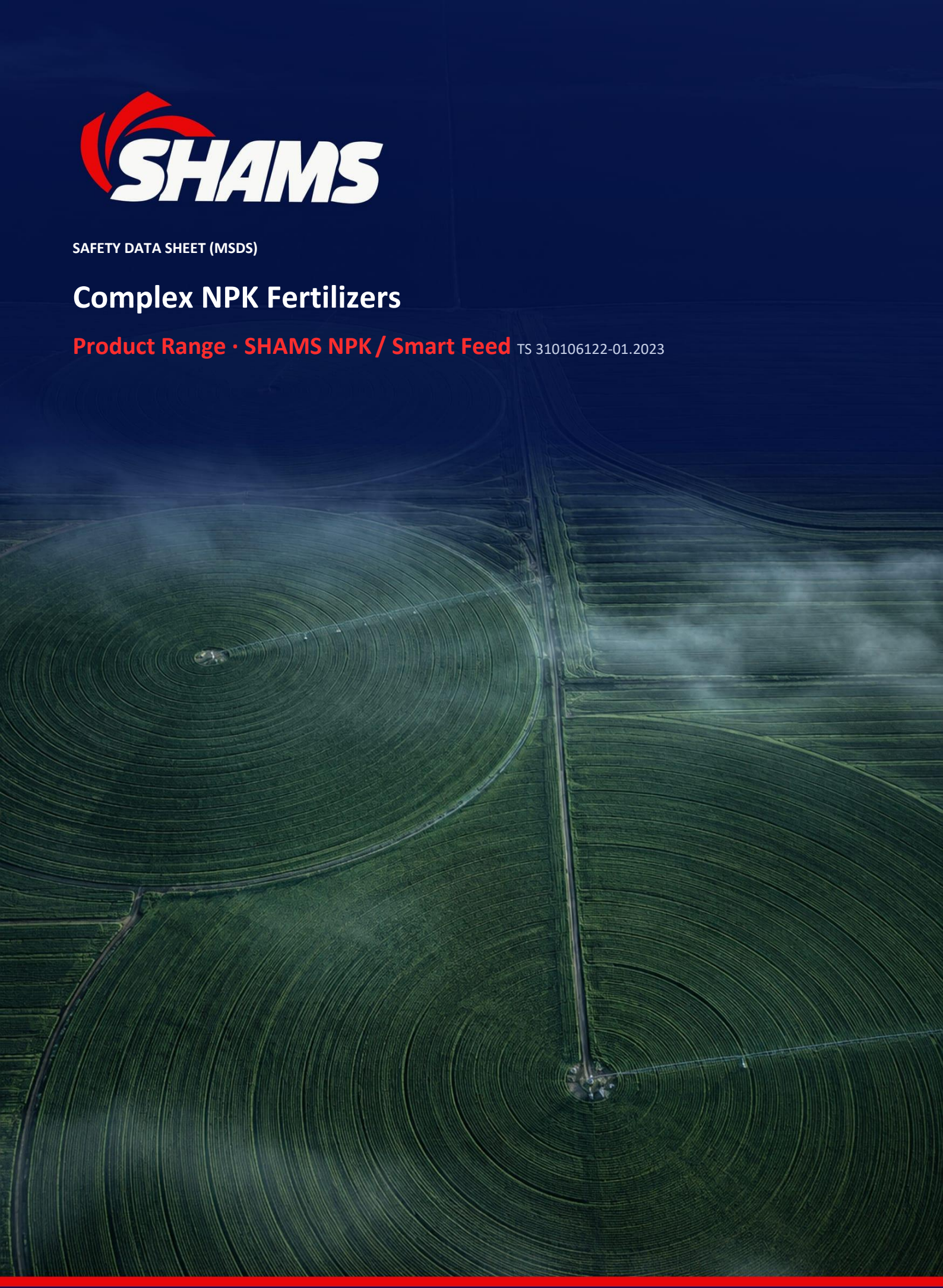
SAFETY DATA SHEET (MSDS)

# Complex NPK Fertilizers

## Product Range · SHAMS NPK / Smart Feed TS 310106122-01.2023



**ПАСПОРТ БЕЗОПАСНОСТИ (MSDS)**

**Удобрения минеральные комплексные NPK · ТС 310106122–01.2023 · г. Ташкент, 2026**

**СОГЛАСОВАНО**
Главный Инженер
Рейзбаев Э.К.
«02» июня 2026 г.

**УТВЕРЖДАЮ**
Генеральный Директор
ООО «SHAMS ASSH»
«3» июня 2026 г.
**М.П.**

## SECTION 1. PRODUCT AND MANUFACTURER IDENTIFICATION

| Parameter | Value |
|---|---|
| Trade name | Complex mineral nitrogen-phosphorus-potassium fertilizers (NPK) |
| HS Code | 3105 20 1000 |
| OKP Code | 218 612 |
| Brand | SHAMS NPK / Smart Feed |
| Grades | NPK; 15-15-15 +10S+TE, 16-16-16, 10-20-20, 10-26-26, 18-18-18, 17-17-17, 8-17-27, 6-16-32, 6-18-27, NPS 20-20-14 and other grades |
| Chemical name / formula | not applicable (mixture) |
| Synonyms | NPK fertilizers, complex mineral fertilizers |
| Intended use | Granular complex fertilizer. For agricultural use on cereals, cotton, fruit, vegetable, berry and ornamental crops in open fields and protected cultivation. |
| Regulatory document | TS 310106122-01.2023 |
| Manufacturer / supplier | SHAMS ASSH LLC |
| Address | Republic of Uzbekistan, Tashkent Region, Yangiyul District, Khujobod MFY, GES-4 Residential Area, Building 36 |
| Telephone | +998 70 020-99-00 |
| E-mail / website | shamsagrouzb@gmail.com · shamsagro.uz |
| Emergency telephone | +998 70 020-99-00 (24 hours) |

## SECTION 2. HAZARD IDENTIFICATION

### 2.1 Classification

Under GOST 12.1.007, the product is assigned to hazard class 3 (moderately hazardous substance). Under Regulation (EC) No 1272/2008, the product is not classified as hazardous.

### 2.2 Label elements

No labeling is required under Regulation (EC) No 1272/2008.

### 2.3 Other hazards

Does not meet the criteria for persistent, bioaccumulative and toxic substances (PBT / vPvB). Product dust may contaminate the air; release into bodies of water may contaminate the water.

## SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

| Component | CAS No. | EC No. | Content, % |
|---|---|---|---|
| Monoammonium phosphate $NH_4H_2PO_4$ | 7722-76-1 | 231-764-5 | 20–50 |
| Ammonium sulfate $(NH_4)_2SO_4$ | 7783-20-2 | 231-984-1 | 0–35 |
| Potassium chloride KCl | 7447-40-7 | 231-211-8 | 20–60 |
| Urea $CO(NH_2)_2$ | 57-13-6 | 200-315-5 | 3–20 |
| Anti-caking additive | — | — | 0–0.4 |

* Potassium sulfate is used as the potassium source when potassium chloride is not used, and vice versa. The composition is stated by product type; the specific content of components depends on the fertilizer grade.

## SECTION 4. FIRST-AID MEASURES

- General measures: rest, warmth, a comfortable body position and access to fresh air.
- Inhalation: move the person to fresh air and provide drinking water; seek medical attention if symptoms persist.
- Skin contact: rinse with running water until the product is completely removed, using soap if available; seek medical attention if irritation occurs.
- Eye contact: rinse with running water for at least 10–15 minutes and remove contact lenses if possible; seek medical attention in case of pain, irritation or impaired vision.
- Ingestion: rinse the mouth and provide plenty of drinking water; do not induce vomiting unless directed by a physician.

Symptoms: prolonged skin contact may cause irritation and redness; prolonged eye contact may cause irritation and tearing. No data on acute intoxication are available.

## SECTION 5. FIRE-FIGHTING MEASURES

**Fertilizers do not present fire or explosion hazards (non-combustible).**

- Extinguishing media: use media suitable for extinguishing the burning packaging; limit the use of water to avoid environmental contamination.
- Special hazards: ammonia may be released at high fire temperatures.
- Advice for firefighters: wear protective clothing and self-contained breathing apparatus.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personnel: use PPE (Section 8); do not touch or walk through spilled product.
- Emergency teams: use PPE, evacuate unauthorized persons from the spill area, provide ventilation and minimize dust generation during collection.
- Environmental precautions: avoid dust generation; prevent the product from entering surface water or groundwater.
- Collection: collect clean spilled product in a container for subsequent intended use; handle contaminated product in accordance with Section 13.

## SECTION 7. HANDLING AND STORAGE

### 7.1 Handling

Use PPE; avoid uncontrolled release of the product into the environment; use local supply and exhaust ventilation; do not eat, drink or smoke while working.

### 7.2 Storage

Store in dry, enclosed warehouses protected from moisture and contamination, away from food and animal feed. Product in big bags may be stored outdoors under a canopy that protects it from precipitation and groundwater. Do not store with incompatible materials (Section 10). Guaranteed shelf life: 1 year from the date of manufacture.

## SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1 Control parameters (workplace exposure limits)

| Component | Workplace OEL / ELV |
|---|---|
| Monoammonium phosphate | 6.0 mg/m³ |
| Ammonium sulfate | 10.0 mg/m³ |
| Calcium sulfate | 2.0 mg/m³ |
| Product as a whole (under GOST) | 10 mg/m³ |

### 8.2 Personal protective equipment

- Eye protection: dust-proof safety goggles (EN 166).
- Skin and hand protection: protective clothing, safety footwear (EN 344) and protective gloves (EN 374).
- Respiratory protection: respirator (EN 149) with a particulate filter (EN 143).
- Engineering controls: general supply and exhaust ventilation and sealed equipment.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

| Parameter | Value |
|---|---|
| Appearance | granular material |
| Physical state | solid |
| Color | light gray to reddish |
| Odor | none |
| pH | 4.5–6.5 (depending on grade) |
| Melting point | above 150 °C — urea decomposition |
| Boiling point | decomposes before boiling |
| Oxidizing properties | none |
| Ignition temperature | non-combustible |
| Bulk density | 1.0–1.15 g/cm³ |
| Solubility | soluble in water |

## SECTION 10. STABILITY AND REACTIVITY

- Reactivity: no oxidizing or reducing properties.
- Chemical stability: stable under normal conditions (T = 273.15 K, P = 101.3 kPa) and recommended storage conditions.
- Hazardous reactions: none expected.
- Conditions to avoid: temperatures above 70 °C; contact with acids and alkalis.
- Incompatible materials: acids and alkalis.
- Hazardous decomposition products: ammonia.

## SECTION 11. TOXICOLOGICAL INFORMATION

- Accumulation: in the body, the product dissociates into ammonium ions ($NH_4^+$), potassium ions ($K^+$), sulfate ions ($SO_4^{2-}$) and phosphate ions ($PO_4^{3-}$); phosphates and ammonium ions are excreted in the urine.
- Acute toxicity: $LD_{50}$ (oral) > 2800 mg/kg; $LD_{50}$ (dermal) > 5000 mg/kg; $LC_{50}$ (inhalation) > 5000 mg/m³. No lethal cumulative effects have been identified.
- Irritation: a single exposure does not irritate the skin; prolonged exposure may cause skin irritation, tearing and eye irritation.
- Sensitization: none. Mutagenicity: none. Carcinogenicity and reproductive toxicity: no data available.

## SECTION 12. ECOLOGICAL INFORMATION

| Component | Aquatic toxicity |
|---|---|
| Monoammonium phosphate | fish $LC_{50}$ > 85.9 mg/L; invertebrates $EC_{50}$ 1790 mg/L; algae > 100 mg/L |
| Ammonium sulfate | fish $LC_{50}$ 53 mg/L |
| Urea | fish $LC_{50}$ 6810 mg/L; invertebrates $EC_{50}$ 10000 mg/L |
| Potassium chloride | fish $LC_{50}$ 2010 mg/L; invertebrates $EC_{50}$ 825 mg/L; algae 2500 mg/L |

Persistence and degradability: the main components are inorganic and dissociate into ions in aqueous solutions. Bioaccumulation: low potential. Mobility in soil: soluble; dissociates into ions.

## SECTION 13. DISPOSAL CONSIDERATIONS

- Use PPE when handling contaminated product and packaging.
- Clean collected product may be used to fertilize soil. Dispose of contaminated product in accordance with national waste legislation. It is not classified as hazardous waste.
- Packaging: do not use bodies of water to wash packaging, vehicles or equipment contaminated with fertilizer; dispose of empty packaging in accordance with applicable legislation.

## SECTION 14. TRANSPORT INFORMATION

- UN number: not applicable. The goods are not classified as dangerous for international transport or under GOST 19433-88.
- May be transported by all modes in accordance with applicable cargo transport rules: rail (covered / specialized railcars), water and road (covered vehicles).
- Transport marking: “Keep Dry” (GOST 14192-96).

## SECTION 15. REGULATORY INFORMATION

The product is not classified under Regulation (EC) No 1272/2008. The manufacturer’s regulatory document is TS 310106122-01.2023.

Laws of the Republic of Uzbekistan: “On Consumer Rights Protection”, “On Protection of Atmospheric Air”, “On State Sanitary Supervision”, “On Standardization”, “On Metrology” and “On Nature Protection”.

## SECTION 16. OTHER INFORMATION

### Abbreviations

$LD_{50}$ — lethal dose for 50% of test organisms; $LC_{50}$ — lethal concentration for 50% of test organisms; $EC_{50}$ — concentration producing 50% of the effect; MPC — maximum permissible concentration; PBT / vPvB — persistent, bioaccumulative and toxic substances.

### Information sources

Manufacturer's Technical Specification TS 310106122-01.2023; public substance databases (ESIS, GESTIS); safety data sheets for the components.

### Disclaimer

The information is based on data and experience available to SHAMS ASSH LLC as of the date this Safety Data Sheet was prepared and applies only to this product. It may not be valid when the product is used in combination with other substances or materials that affect its properties. The manufacturer assumes no liability for damage resulting from improper use, storage or transportation of the product.