

## SAFETY DATA SHEET

According to UN-GHS as adopted in the US Hazard Communication Standard (HCS) 2012

### NPK(S) 28-0-5(6) SOP

#### SECTION 1: IDENTIFICATION

(a) Product Identifier used on the label NPK(S) 28-0-5(6) SOP

(b) Other means of identification

Synonyms

**NPK(S) 28-0-5(6) SOP**

Double-salt of ammonium sulphate (CAS 7783-20-2), ammonium nitrate (CAS 6484-52-2) and potassium sulphate (CAS 7778-80-5)

Product name, Grades NPK(S) 28-0-5(6) SOP

(c) Recommended use of the chemical and restrictions on use Agricultural industry: Fertilizer.

(d) Name, address, and telephone number of the chemical manufacturer

Manufacturer company Uralchem, JSC

name: KCKK Branch of Uralchem JSC in Kirovo-Chepetsk

Address: Presnenskaya Naberezhnaya 6 bldg. 2

Moscow, 123112, Russia

KCKK Branch:

Pozharniy Pereulok 7, Kirovo-Chepetsk

Kirov Oblast, 613040, Russia

Phone: Tel.: +7 (83361) 9-42-24

Fax:

Email address: E-mail: [marketing@uralchem.com](mailto:marketing@uralchem.com)

(e) Emergency phone number 1-877-271-70-74

#### SECTION 2: HAZARD(S) IDENTIFICATION

(a) Classification of the chemical in accordance Eye Irritant Category 2A, H319

with paragraph (d) of §  
 1910.1200

(b) Signal word  
 Hazard statement(s)  
 Symbol(s)

WARNING  
 H319: Causes serious eye irritation.



Precautionary  
 statement(s)

P264: Wash hands, forearms, and other exposed areas thoroughly after handling  
 P280: Wear protective gloves/protective clothing/eye protection/face protection.  
 P305: IF IN EYES:  
 P351: Rinse cautiously with water for several minutes.  
 P338: Remove contact lenses, if present and easy to do. Continue rinsing.  
 P337: If eye irritation persists:  
 P313: Get medical advice/attention

(c) Description of any  
 hazards not otherwise  
 classified

None known

(d) Additional  
 information:

None

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Name	CAS	Content, %	Classification
Ammonium nitrate*	6484-52-2	65-69	Oxidising solid 3, H272 Eye Irritation 2A, H319
Potassium sulphate	7778-80-5	9-13	Not classified
Ammonium sulphate	7783-20-2	18-22	Not classified

Under customer request, the product is processed with an anti-caking additive in amount of not more than 0.1%.

*The product does not contain impurities or additives that could affect product's classification and labelling according to Hazard Communication Standard (HCS) 2012 in the concentration ranges specified.*

\*Ammonium nitrate ions are bound in a double salt with ammonium sulfate.

### SECTION 4: FIRST-AID MEASURES

(a) Description of  
 necessary measures,

subdivided according to the different routes of exposure

Inhalation	Remove casualty to fresh air and keep warm and at rest. Rinse nasal cavity with water. Seek medical advice.
Skin contact	After contact with skin, wash immediately with plenty of water and soap. Seek medical advice if irritation develops.
Eye contact	In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.
Ingestion	If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Give activated carbon, in order to reduce the resorption in the gastro-enteric tract.
(b) Most important symptoms/effects, acute and delayed	Skin contact: may cause irritation, reddening, scaling and itching. Eye contact: may cause irritation, redness and watering. Ingestion: nausea, vomiting, abdominal pain. Inhalation: weakness, headache, cough, sore throat.
(c) Indication of immediate medical attention and special treatment needed	Treat symptomatically. First aid equipment: eye-bath, sterile roller-bandage, cotton, activated carbon, saline purge.

## SECTION 5: FIRE-FIGHTING MEASURES

(a) Extinguishing media	
Suitable extinguishing media:	Water spray.
Unsuitable extinguishing media:	Foam extinguishers, carbon dioxide, dry chemicals. Sand. Water steam.
(b) Specific hazards arising from the chemical	Can be released in case of fire >390°F (200 °C) and during interaction with sulfur, pyrite sulfur, acids, superphosphate, chloride of lime: Nitrogen oxides (NO <sub>x</sub> ).
Hazardous combustion products:	Nitrogen oxides (NO <sub>x</sub> ), sulphur oxides, ammonia.
(c) Special protective equipment and precautions for fire-fighters	Fight fire with normal precautions from a reasonable distance. Wear NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode and protective fire fighting clothing (includes fire fighting helmet, face shields, gas mask, coat, trousers, boots, and gloves).

## SECTION 6: ACCIDENTAL RELEASE MEASURES

(a) Personal precautions	Provide adequate ventilation. Provide extract ventilation to points where emissions occur. Keep away from heat sources (e.g. hot surfaces), sparks and open flames.
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Protective equipment:	Use only non-sparking tools. Dustproof grounded equipment. Wear personal protection equipment. See protective measures Sections 7 and 8.
Environmental precautions	Do not allow water used to extinguish fire to enter drains or waterways. Do not empty into drains or the aquatic environment. Do not allow to enter into soil/subsoil. Wet scrubber for dust elimination of waste gases.
(b) Methods and materials for containment and cleaning up.	Remove mechanically, placing in appropriate containers for disposal. For additional information, refer to Section 8 and 13.

**SECTION 7: HANDLING AND STORAGE**

(a) Precautions for safe handling	Provide adequate ventilation. See NFPA 400: Hazardous Material Code (latest edition) for all the fire and safety requirements applicable to handling, storage and use. Wear personal protection equipment (see section 8). Avoid breathing dust.
(b) Conditions for safe storage, including any incompatibilities	Store in closed warehouses protected the product from atmospheric precipitation, direct sunlight, groundwater, avoid exposure to high temperatures, humidity, store separately from other substances and materials (see Section 10) in a closed container. Store in accordance with all applicable local, regional, national, provincial and territorial regulations, including 29 CFR 1910.109(i). Contact your local authority having jurisdiction to determine any additional specific handling, storage and approval requirements. For retail: guaranteed shelf life- 18 months after production. Keep away from children. Keep away from food, drink and animals feedingstuffs. Packaging: PP bags and special plastic disposable containers.

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

(a) Control parameters	No occupational exposure limits have been established for substances, listed in Section 3. We recommend that our product should be treated as a nuisance dust 10 mg/m <sup>3</sup>
(b) Appropriate engineering controls	Ensure all national/local regulations are observed. Provide adequate ventilation in work zones. Good general ventilation should be sufficient for most conditions.
(c) Individual protection measures, such as personal protective equipment	Use of personal protective equipment must be consistent with good occupational hygiene practices. General requirements for personal protective equipment are described in [1910.132].
Hygiene measures:	Personal hygiene and industrial sanitation in the production at the facility (wash hands at the end of

- each work shift and before eating, drinking, smoking or using the toilet).
- Eye/Face protection: Wear eye protection with side shields or Goggles, giving complete protection to eyes [1910.133].
- Skin Protection (Hand and Body): Wear suitable working clothing to minimize skin contact; including long sleeved shirts and pants or coveralls Wear approved work gloves [Rubber gloves. Butyl or Neoprene [1910.138] Leather or rubber boots.
- Respiratory Protection: Wear respiratory protection.  
 If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

- (a) Appearance
- |                |                  |
|----------------|------------------|
| physical state | Solid, Granulate |
| color          | Not applicable   |
- (b) Odor Odourless
- (c) Odor threshold Not available
- (d) pH >4.5 (10% solution)
- (e) Melting point/freezing point 338°F (170°C)
- (f) Initial boiling point and boiling range Decomposes before boiling
- (g) Flash point Not applicable (solid)
- (h) Evaporation rate Not available
- (i) Flammability Non-flammable
- (j) Upper/lower flammability or explosive limits Not available
- (k) Vapor pressure Does not evaporate
- (l) Vapor density Not available
- (m) Relative Density 1.00-1.05 g/cm<sup>3</sup> (bulk density)
- (n) Solubility(ies) 100% Soluble in water, partially soluble in acetone, ethyl alcohol and methyl alcohol. Insoluble in fats.  
 Not available
- (o) Partition coefficient: n-octanol/water
- (p) Auto-ignition temperature Not available
- (q) Decomposition temperature ≥ 410°F (210°C)
- (r) Viscosity Not available (solid)
- (s) Granulometry:
- |                        |     |
|------------------------|-----|
| under 1mm, max, %      | 3   |
| from 1 to 5 mm, min, % | 90  |
| under 6,3 mm, %        | 100 |
- (t) Explosive properties Not explosive

**Other information:**

Friability, % 100  
 Oxidising properties: Not oxidizing

## SECTION 10: STABILITY AND REACTIVITY

- |  |  |
|--|--|
| (a) Reactivity                         | Hazardous reactions will not occur under normal conditions.  |
| (b) Chemical stability                 | Stable under normal temperatures and pressures.  |
| (c) Possibility of hazardous reactions | Reacts with: strong alkalis, strong acids.   |
| (d) Conditions to avoid                | Avoid high temperatures above 86°F (30°C), open flame, sparks, long term exposure to direct sunlight, and contact with incompatible materials. Protect from moisture.  |
| (e) Incompatible materials             | Flammable substances, reducers, acids, alkalis, chlorates, chlorides, chromates, nitrites, permanganates, metal powder, substances containing metals: such as copper, nickel, cobalt, zinc and their alloys, petroleum products and strong bases; NaOCl. |
| (f) Hazardous decomposition products   | Nitrogen and sulfur oxides, ammonia.   |

## SECTION 11: TOXICOLOGICAL INFORMATION

- |   |   |
|---|---|
| General information:  | No significant health hazard in normal industrial use conditions.   |
| (a) Information on the likely routes of exposure  | Eye contact, Ingestion, Inhalation. Skin contact.   |
| (b) Symptoms related to the physical, chemical and toxicological characteristics              | Refer to Section 4.   |
| (c) Delayed and immediate effects and also chronic effects from short- and long-term exposure | After inhalation: may cause respiratory irritation.<br>After Skin Contact: may cause skin irritation.<br>After Eye Contact: Causes serious eye irritation. Redness, pain, swelling, itching, burning, tearing, blurred vision.<br>After Ingestion: Ingestion may cause methemoglobinemia with headache, fatigue and a blue colour to the skin and lips.<br>Chronic Symptoms: Overexposure to this material may result in methemoglobinemia. |
| Acute toxicity  | Not classified.   |
| Irritation/Corrosivity:   |   |
| Skin irritation/corrosion   | Not classified  |
| Eye irritation  | Causes serious eye irritation   |
| Respiratory tract   | Not irritating.   |
| Sensitization:  | Not sensitising.  |
| Repeated dose toxicity:   | Not classified.   |

Chronic oral toxicity:	Not classified.
Chronic inhalation toxicity:	Not classified.
Chronic dermal toxicity:	Not classified.
Germ cell mutagenicity:	Not classified.
Reproductive toxicity:	Not classified.
STOT - single exposure:	Not classified.
STOT - repeated exposure:	Not classified.
Aspiration hazard:	Not classified.
(d) Numerical measures of toxicity	<b>Ammonium Nitrate (CAS 6484-52-2)</b> LD50 Oral =2217mg/kg , rat LC50 Inhalation >88.8 mg/l/4h, rat LD50 Dermal>5000 mg/kg <b>Potassium sulphate (CAS 7778-80-5)</b> LD50 Oral > 2000mg /kg , rat LC50 Inhalation >1200 mg/m <sup>3</sup> air (rat, male) (8 h) LD50 Dermal>2000 mg/kg <b>Ammonium Sulphate (7783-20-2)</b> LD50 Oral> 2000mg/kg, rat LD50 Dermal>2000 mg/kg
(e) Carcinogenicity	Not classified. No component of this product, present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by NTP, IARC OSHA.

## SECTION 12: ECOLOGICAL INFORMATION

General Information	Fertilizers, containing AN, can cause poisoning in livestock and poultry. Large spills may kill vegetation and fish and cause algae blooms if waterways are contaminated.
(a) Ecotoxicity	Not classified <b>Ammonium nitrate</b> Acute toxicity to fish LC50=447mg/l Species: <i>Cyprinus carpio</i> (freshwater , static ) Dabrowska, H. and Sikora, H. (1986)  Acute toxicity to crustaceans EC50=490 mg/L (48h) (freshwater , read-across)Species: <i>Daphnia magna</i> Dowden, B. F. and Bennett H. J. (1965)  Acute toxicity to algae and other aquatic plants: Species: <i>Several benthic diatoms</i> EC50> 1700 mg/L (read-across) (10d) (marine water, inhibition of growth rate) Admiraal W. (1977)  <b>Potassium sulphate</b> Acute toxicity to fish LC50=680mg/l (96 h) according to EPA guidelines, species: <i>fathead minnow fish</i>  Acute toxicity to crustaceans EC50=720 mg/L (48 h) (Freshwater) according to EPA guidelines

Species: *Daphnia magna*

**Ammonium sulphate**

Acute toxicity to fish LC50=53 mg/l (96 hours)

Species: *Oncorhynchus mykiss*,

LC50=57.2 mg/L

Species: *Mountain whitefish (Prosopium williamsoni)*; Review on Ammonia U.S. EPA (1999) Species: *Rainbow trout, Donaldson trout*, (freshwater , static )

Acute toxicity to crustaceans EC50=169 mg/L (48h) (freshwater)

Species: *Daphnia magna* OECD Guideline 202

EC50=121.7 mg/L *Ceriodaphnia acanthina*,

Review on Ammonia U.S. EPA (1999)

(b) Persistence and degradability

In water, the substance is completely dissociated.

Required removal efficiency (wastewater):

Anaerobic conversion of ammonium: Average biodegradation 68 ° F (20 ° C): 52 g N / kg / day.

Anaerobic transformation of nitrate:

Average rate of biodegradation 68 ° F (20 ° C): 70 g N / kg / day.

(c) Bioaccumulative potential

Low bioaccumulation potential

(d) Mobility in soil

Low adsorption potential.

(e) Other adverse effects (such as hazardous to the ozone layer)

Not available.

**SECTION 13: DISPOSAL CONSIDERATIONS**

(a) Disposal methods

This product and its packaging must be disposed of in a safe way. Generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional or local authority requirements.

Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer but processed in a suitable effluent treatment plant. Depending on the degree and nature of the contamination, dispose of it as fertilizer on the field, as a raw material or in an authorized waste facility. Incineration or landfill should only be considered when recycling is not feasible.

(b) Precautions for disposal (including the disposal method of contaminated containers and packages)

Empty containers or liners may contain product residues. Packages should be emptied and can be recycled after thorough cleansing. If approved by local authorities, empty containers may be disposed of as non-hazardous material or returned for recycling.

## SECTION 14: TRANSPORT INFORMATION

### General Information

(a) UN number	Not applicable
(b) UN proper shipping name	Not applicable
(c) Transport hazard class(es)	Not applicable
(d) Packing group, if applicable	Not applicable
(e) Environmental hazards (e.g., Marine pollutant)	The product is ecologically safe. As to the influence on sea environment cargo is related to harmless pollutants.
(f) Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)	Not applicable
(g) Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises	It is necessary to exclude contact of cargo to heated surfaces from above 122°F(50°C).
(h)DOT (US):	Not applicable

## SECTION 15: REGULATORY INFORMATION

### Safety, health and environmental regulations specific for the product in question

#### Federal Regulations

##### **Ammonium nitrate (CAS 6484-52-2)**

Listed on the United States TSCA (Toxic Substances Control Act) inventory  
USA - TSCA - Chemical Data Reporting (CDR) (subject to 25,000 lb reporting threshold)

##### **Potassium sulphate (CAS 778-80-5)**

Listed on the United States TSCA (Toxic Substances Control Act) inventory  
USA - TSCA - Chemical Data Reporting (CDR) (subject to 25,000 lb reporting threshold)  
USA - CFR - 19. Title 21 - Part 582 (Substances Generally Recognized as Safe) Subpart B - General Purpose Food Additives - Conditions of use: This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice

##### **Ammonium sulphate (CAS 7783-20-2)**

Listed on the United States TSCA (Toxic Substances Control Act) inventory  
USA - TSCA - Chemical Data Reporting (CDR) (subject to 25,000 lb reporting threshold)  
USA - CFR - 19. Title 21 - Part 582 (Substances Generally Recognized as Safe) Subpart B - General Purpose Food Additives - Conditions of use: This substance is generally recognized as safe when used in accordance with good manufacturing or feeding practice

#### US State Regulations

NPK(S) 28-0-5(6) SOP  
 VERSION: 001  
 DATE CREATED: 01/11/2023  
 LANGUAGE: ENGLISH

**Ammonium nitrate (CAS 6484-52-2)**

- U.S. - California - Toxic Air Contaminant List (AB 1807, AB 2728)
- U.S. - Delaware - Accidental Release Prevention Regulations - Sufficient Quantities
- U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities
- U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 1
- U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 2
- U.S. - Massachusetts - Oil & Hazardous Material List - Reportable Quantity
- U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 1
- U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 2
- U.S. - Massachusetts - Right To Know List
- U.S. Massachusetts State - TURA
- U.S. - New York State - Community RTK Law - Hazardous Substance List
- U.S. - New Jersey - Right to Know Hazardous Substance List
- U.S. - New Jersey - Special Health Hazards Substances List
- U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
- U.S. - Pennsylvania - RTK (Right to Know) List
- U.S. - Rhode Island State - Hazardous substances RTK Act - Hazardous Substance List
- U.S. - Texas - Effects Screening Levels - Long Term
- U.S. - Texas - Effects Screening Levels - Short Term

**Ammonium sulphate (CAS 7783-20-2)**

- U.S. - California – SCAQMD -Toxic Air Contaminants With Proposed Risk Values
- U.S. - California - Toxic Air Contaminant List (AB 1807, AB 2728)
- U.S. - Massachusetts - Right To Know List
- U.S. - Massachusetts State - TURA
- U.S. - New York State - Community RTK Law -Hazardous Substance List
- U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
- U.S. - Pennsylvania - RTK (Right to Know) List
- U.S. – Rhode Island – Air Toxics Acceptable Ambient Levels - 1-hour
- U.S. – Rhode Island – Air Toxics Acceptable Ambient Levels - Annual
- U.S. - Texas - Effects Screening Levels - Long Term U.S. - Texas - Effects Screening Levels - Short Term

**SECTION 16: OTHER INFORMATION**

**Indication of changes of the SDS**

Version	Date of change	Section	Description of changes
001	01/11/2023	1-16	First edition created according to recommendations Hazard Communication Standard (HCS) 2012

**Abbreviations and acronyms**

LD50	Lethal Dose to 50% of a test population (Median Lethal Dose)
LC50	Lethal Concentration to 50 % of a test population
TSCA	Toxic Substances Control Act
EPA	Environmental Protection Agency
NTP	National Toxicology Programm

OSHA	Occupational Safety & Health Administration
PEL	Permissible Exposure Limit
TWA	Time-Weighted Average
STEL	Short-Term Exposure Limits
DOT	US Department of transportation
REL	Recommended Exposure Limit
NIOSH	National Institute for Occupational Safety and Health (USA)
ACGIH	American Conference of Governmental Industrial Hygienists
WEEL	US Workplace Environmental Exposure Level Guides Material
IRIS	Integrated Risk Information System database
NFPA	National Fire Protection Association
EPA	Environmental Protection Agency
CFR	Code of Federal Regulations of USA
ACGIH	American Conference of Governmental Industrial Hygienist
IARC	International Agency for Research on Cancer

**Key literature references and sources**

TOXNET databases on toxicology, hazardous chemicals, environmental health, and toxic releases  
 U.S. National Library of Medicine, NCIS  
 OSHA chemical database <https://www.osha.gov/chemicaldata/>  
 TSCA Chemical Substance Inventory  
 PubChem Data Base

NFPA Hazard Rating: Health-2 / Flammability-0 / Reactivity-0, Specific Hazard-0  
HMIS Hazard Rating: Health-2/ Flammability-0 / Reactivity-0 (0=Insignificant, 1=slight, 2=Moderate, 3=High, 4=Extreme).

**DISCLAIMER**

This information is based on current level of knowledge. Information contained in that SDS is believed to be accurate and is given in good faith, but it is for the Users to satisfy themselves of the suitability of the product for their own particular purpose. This information may be subject to revision as new knowledge and experience becomes available, and JSC “URALCHEM” makes no warranties and assumes no liability in connection with any use of this information. You should not use the product other than for the stated application or applications without seeking advice from us. It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations.

**END OF SAFETY DATA SHEET**