

Muriate of Potash

Version: 2.2

Revision date: 19.08.2020

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier	Substance technical name:	Muriate of Potash
	Substance chemical name:	Potassium Chloride
	CAS No.7447-40-7	EC No. 231-211-8
	REACH registration number: not applicable as the substance is exempt from registration according to Regulation (EC) no. №1907/2006 (REACH).	
1.2. Relevant identified uses of the substance or mixture and uses advised against	Chemical production, fertilizer for agriculture, other applications No restrictions on application	
1.3. Details of the supplier of the Safety Data Sheet		
Manufacturer	Public Joint-Stock Company Uralkali (PJSC Uralkali) 63 Pyatiletki Street, Berezniki, Perm Territory, Russia 618426 Tel: +7 (3424) 296059 Fax: +7 (3424) 296950 E-mail: uralkali@uralkali.com	
1.4. Emergency telephone number	Ms.Svetlana Aliferova Tel: +7 (34253) 62847 (06:00 – 15:00, Moscow time) E-mail: Svetlana.Aliferova@uralkali.com	

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture	Not classified as hazardous
2.2. Label elements	No labelling is required for the substance according to EC directives
2.3. Other hazards	See Section 7.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances	Chemical name (IUPAC):	Potassium Chloride	
	Chemical formula:	KCl	
Composition:	Mass fraction, %	CAS No.	EINECS No.
Potassium chloride	95-98	7447-40-7	231-211-8

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Sodium chloride	1.1-3.0	7647-14-5	231-598-3
Calcium sulphate	0.1-0.6	7778-18-9	231-900-3
Magnesium chloride hexahydrate	0.05-0.1	7791-18-6	232-094-6

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures	<p>Inhalation: fresh air, keep person warm and at rest.</p> <p>Skin contact: rinse thoroughly with running water. If necessary, consult a doctor.</p> <p>Eye contact: rinse thoroughly with plenty of water. If necessary, consult a doctor.</p> <p>Swallowing: rinse mouth, drink plenty of water, give activated charcoal (1 g per glass of water), saline purge. If necessary, consult a doctor.</p>
4.2. Most important symptoms and effects, both acute and delayed	<p>Inhalation: throat scratching, coughing, nausea</p> <p>Skin contact: irritation</p> <p>Eye contact: slight irritation, lacrimation</p> <p>Clinical picture of acute toxic exposure: weakness, depression of motor ability, throat scratching, coughing, respiratory rhythm disturbance</p> <p>Swallowing (high doses): mouth burning, nausea, vomiting, stomach pain, diarrhea, disturbance of heartbeat and movement coordination, convulsions</p>
4.3. Indication of any immediate medical attention and special treatment needed	<p>If necessary, ask for medical care.</p> <p>No contra-indications</p> <p>First-aid means: activated charcoal, saline purge</p>

Section 5: FIREFIGHTING MEASURES

5.1. Extinguishing media	<p>Nonflammable. The material packing may be flammable. Use all types of extinguishers, water, water steam, sand and asbestos covers to extinguish the burning packing (big-bags).</p> <p>Extinguishing media which shall not be used for safety reasons - none</p>
5.2. Special hazards arising from the substance or mixture	<p>Incombustible material, non-fire and explosion hazard</p>
5.3. Advice for firefighters	<p>Fire-proof clothes and a self-rescuer or personal protection depending on the main source of ignition. No special procedures during firefighting</p>

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Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures	<p>Send away all unnecessary people from the affected area. Stop traffic flow. Use personal protection (protection clothes against dust, safety goggles, gloves, mittens and special shoes). Render first-aid to victims or send them to hospital.</p> <p>In case of fire use fire-proof clothes, a self-rescuer or other protection equipment depending on the main source of ignition.</p>
6.2. Environmental precautions	<p>In case of spillage indoors collect spills into containers, flush away traces with water. Do not let spills enter drains and water courses when handling the material outside and during transportation. In case of dusting cover with sand or soil. Flush away the material traces from transport facilities and hard surfaces with plenty of water.</p>
6.3. Methods and material for containment and cleaning up	<p>Sweep up spills and place into containers using any materials, instruments or equipment available.</p> <p>See subsection 6.2.</p>
6.4. References to other sections	<p>See Section 8 and Section 13.</p>

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling	<p>Nonflammable material. Use fire-fighting means as recommended depending on the main source of ignition.</p> <p>Forced and exhaust ventilation of the workplace</p> <p>Avoid contact with incompatible substances during storage: organic substances, acids, alkalis.</p> <p>Avoid the material release in the air, sewerage, subsoil and surface waters and soil. Clean workplace, collect spills, avoid dusting during when packing the material.</p> <p>Follow general technological hygiene rules:</p> <ul style="list-style-type: none"> - do not eat, drink and smoke in the workplace; - wash hands before breaks and after the end of workday; - take off dirty work clothes when entering the dining area.
7.2. Conditions for safe storage, including any incompatibilities	<p>Store in covered warehouses, avoid contact with atmospheric precipitation and ground waters. The material may be stored outdoors in big-bags on hard surface grounds under shelters.</p> <p>The material in bags shall be stacked up in covered, clean and dry warehouses on wooden grids, coverings and pallets minimum 1 m away from heating devices.</p> <p>No special storage instructions</p> <p>Guarantee storage period of the material from the date of shipment</p>

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	ex production site: in bulk – 1 year, in big-bags - 5 years, in bags – 2 years
7.3. Specific end use (s)	See subsection 1.2.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION	
8.1. Control parameters	Maximum allowable concentration (MAC) of the material dust in the air of the workplace - 5 mg/m ³ (under the Russian legislation)
8.2. Exposure controls	Aspiration in places of the material reloading
8.2.1. Appropriate engineering controls	Ventilation of production premises
8.2.2. Individual protection measures, such as personal protective equipment	Eye protection: goggles Hand protection: cotton mittens or gloves Respiratory protection: dust-proof respirators Other: special clothes (cotton suit), special safety shoes (rubber boots or leather shoes)
8.2.3. Environmental exposure controls	Air control

Section 9: PHYSICAL AND CHEMICAL PROPERTIES	
9.1. Information on basic physical and chemical properties	White with grayish shades crystals or pellets or granules, or pink to red-brown fine grains or granules Odour: none Non-fire and explosion hazard Radiation-free pH - 5.5-8.8 (50,000 mg/l of water) Melting temperature: 768-772°C Boiling temperature: 1,406-1,413°C Ignition temperature: none Inflammability: none Compactness of single crystals: 1.98 g/cm ³ Solubility in water, mg/l: 330,000-347,000 (20°C) 560,000-567,000 (100°C) Slightly soluble in liquid ammonia and ethyl alcohol Autoignition temperature: none Explosive properties: none Oxidizing properties: none
9.2. Other information	See subsection 10.4.

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Section 10: STABILITY AND REACTIVITY

10.1. Reactivity	Reacts with acids and alkalis.
10.2. Chemical stability	A chemically stable compound
10.3. Possibility of hazardous reactions	Reacts with concentrated sulphuric and nitric acids at high temperature giving off hydrogen chloride, a toxic choking gas.
10.4. Conditions to avoid	The material is corrosive when wet.
10.5. Incompatible materials	Organics, acids, alkalis
10.6. Hazardous decomposition products	See subsection 5.2.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008	The material is not subject to Regulation (EC) No 1272/2008 (Classification, Labelling and Packaging of Substances and Mixtures).		
	Acute toxicity (LD₅₀, rats, mice)		
	DL₅₀ mg/kg	Route	Species
	2,430-2,600	intragastric	rats
	1,500	intragastric	mice
	660-770	intraperitoneal	rats
	620-1,181	intragastric	mice
	39-142	intravenous	rats
	117	intravenous	mice
	May irritate skin, eyes, respiratory and digestive organs.		
	Routes of exposure: inhalation, swallowing, skin and eye contact		
11.2. Information on other hazards	The material has no endocrine disrupting properties.		

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity	Acute toxicity to fish			
			Species	Time of exposure, hours
	CL₅₀	2,300	mg/l	Leuciscus idus 48
	CL₅₀	373	mg/l	Phoxinus phoxinus 12-29

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	CL₅₀	10,000	mg/l	Gambusia affinus	24
	CL₅₀	4,200	mg/l	Gambusia affinus	48
	CL₅₀	74.6	mg/l	Diplodus cervinus	4.5-15.0
	CL₅₀	2,010	mg/l	Lepomis macrochirus	96
	CL₅₀	5,500	mg/l	Lepomis macrochirus	24
	CL₅₀	12,500	mg/l	Cyprinus carpio	5
	Acute toxicity to Daphnia Magna				
	EC₅₀	825	mg/l		48
	Toxicity to algae				
	EC₅₀	2,500	mg/l	Scenedesmus subspicatus	72
	CL₅₀	1,337	mg/l	Nitschiera linearis	120
	Toxicity to invertebrates				
	CL₅₀	740	mg/l	Austropotamobius pallipes	96
	CL₅₀	1,214	mg/l	Orconectes limosus	96
	EC₅₀	940	mg/l	Physella heterostropka (mollusca)	96
	CL₅₀	398-531	mg/l	Austropotamobius pallipes	30 days
	CL₅₀	626-854	mg/l	Orconectes limoris	30 days
12.2. Persistence and degradability	Extremely stable under abiotic conditions ($t_{1/2}$) > 30 days				
12.3. Bioaccumulative potential	Not tested				
12.4. Mobility in soil	MAC in soil (based on K ₂ O) - 360 mg/kg (under the Russian legislation)				
12.5. Results of PBT and vPvB assessment	See subsection 12.3.				
12.6. Endocrine disrupting properties	None				
12.7. Other adverse effects	The material does not transform in the environment.				

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods	Collect spills of the clean material in containers and send back to production process. Spills of the contaminated material and emptied
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disposable packing should be sent for utilization to places as per local sanitary and/or environmental regulations.
See subsection 6.2.

Section 14: TRANSPORT INFORMATION

14.1. UN number or ID number	None. Not dangerous goods
14.2. UN proper shipping name	Muriate of Potash (MOP), various grades
14.3. Transportation hazard class(es)	Not applicable. Not dangerous goods
14.4. Packing group	Not applicable. Not classified as dangerous goods.
14.5. Environmental hazards	Non-hazardous material
14.6. Special precautions for user	Not required
14.7. Maritime transport in bulk according to IMO instruments	Bulk cargo shipping name: Muriate of Potash (MOP) Not harmful to the marine environment IMSBC: group C

Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture	<p>The material handling is not subject to EC or any other international regulations.</p> <p>Registration of the substance under REACH is not required based on the provisions of REACH Annex V (7), Article 3(39) and Article 3(40) of Regulation (EC) no. №1907/2006 (Registration, Evaluation, Authorization and Restriction of Chemicals).</p> <p>The material is not subject to Regulation (EC) No.1272/2008 (Classification, Labelling and Packaging of Substances and Mixtures).</p> <p>National laws of the Russian Federation: 'Environment Protection', 'Sanitary and Epidemiological Welfare of Population', 'Safe Handling with Pesticides and Agrochemicals'.</p>
15.2. Chemical Safety Assessment	Not required as the material is not classified as hazardous.



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Section 16: OTHER INFORMATION

Disclaimer

End-user bears all responsibility for safe application of the material in accordance with requirements of safety, health and environment regulations, as well as national and international legislation.

The information provided in this Safety Data Sheet is designed for safe handling only and not to be considered as a warranty or quality specification.

The information is correct to the best of PJSC Uralkali knowledge at the date of the document issuance. The information may not be valid for the material used in any other specific applications unless specified in this Safety Data Sheet.

Indication of changes:

Subsections 7.2., 9.1. have been updated in the present version of the Safety Data Sheet from Version 2.1. dated 08.02.2016.

Subsections 9.2., 11.2., 12.6., 14.7. have been added to the present version of the Safety Data Sheet.