



TVEL  
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[www.tvel.ru](http://www.tvel.ru)



# LITHIUM METAL

FUEL COMPANY TVEL IS RUSSIA'S LARGEST PRODUCER OF HIGH-PURITY LITHIUM METAL AND ITS COMPOUNDS

**300 tons**

Current annual production capacity

**1,000 tons**

Annual production capacity by 2030

## SCOPE OF APPLICATION



- Production of primary and secondary batteries
- Pharmaceuticals (reagent catalysts in organic synthesis)
- Alloying constituent of aircraft alloys
- Metallurgy

**FORMS OF PRODUCT:** ingots (sector, cylindrical, trapezoidal forms), tablets, pellets, rods, wires



Ø10 x 5 mm; Ø 10 x 2.5 mm



262 mm x 86 mm x 63/89 mm



Ø100-200 mm, height 200-400 mm



160 x 280 mm x 60°



	Lithium metal Catalyst grade	Lithium metal Battery grade	Lithium metal with increased Al content
Description	Silver white metal		
<b>Chemical composition:</b>			
Weight fraction of lithium, %	98.5 min	99.9 min	99.9 min (Li + Al)
<b>Weight fraction of impurities, %</b>			
Na	0.9 max	0.01 max	0.02 max
K	0.07 max	0.005 max	0.003 max
Ca	0.1 max	0.03 max	0.02 max
Fe	0.01 max	0.005 max	0.003 max
Al		0.003 max	
N	0.1 max	0.03 max	0.03 max
Si	0.03 max	0.01 max	0.01 max
Mg		0.02 max	
Mn		0.001 max	
Cl			0.005 max

Custom production of lithium metal in a form specified by the customer is possible.

The ingots are packaged in an aluminum-laminated plastic bag, which is sealed in inert gas (argon) and placed in bubble polyethylene wrap.

Ingot bags are placed in 210 dm<sup>3</sup> steel barrels filled with dry argon and certified in accordance with the UN requirements. The plastic protection is pre-inserted in the barrel, which ensures safe transportation and additional protection.









Net weight in the barrel is 50 – 90 kg, depending on a product type.

Each barrel is sealed and labeled in strict compliance with Regulations for Transportation of Dangerous Goods.

## PACKAGING OF LITHIUM METAL



## TRANSPORTATION

UN number	1415	
Dangerous Goods class (in transportation)	4.3	
Packaging classification	I	
Environmental hazards	– (not hazardous for environment)	
<b>Transportation of Dangerous Goods by road, rail, and sea (ADR/RID/ADN)</b>		
Class	4.3	
Packaging classification	I	
Labeling	4.3	
<b>Sea Transportation of Dangerous Goods (IMDG Code)</b>		
Class	4.3	
Packaging classification	I	
Labeling	4.3	
<b>Air Transportation of Dangerous Goods (IATA DGR)</b>		
Class	4.3	
Packaging classification	I	
Labeling	4.3	

Goods up to 1 kg are packaged in double aluminum-laminated plastic bags, which are sealed in inert gas (argon) and placed in bubble polyethylene wrap which, in its turn, is put into a metal bucket with a lid. The bucket is placed into a multilayer cardboard box.

## QUALITY CONTROL



All technical processes of lithium production are subject to multi-stage quality control in the company's certified laboratory. A wide range of modern analytical equipment provides high measurement precision for all manufactured lithium products.

## ANALYTICAL CONTROL

Element	Method	Measurement range
Li	Calculated	–
Na	Flame photometry	30 – 1,100 ppm
K	Flame photometry	10 – 500 ppm
Mg	ICP AES	10 – 500 ppm
Ca	ICP AES	35 – 3,000 ppm
Mn	ICP AES	30 – 300 ppm
Fe	ICP AES	10 – 500 ppm
Ni	ICP AES	5 – 100 ppm
Cu	ICP AES	10 – 100 ppm
Al	ICP AES	10 – 500 ppm
Si	ICP AES	10 – 500 ppm
F	Ionometry	> 50 ppm
Cl	Photometry	20 – 600 ppm
N	Photometry	30 – 2,000 ppm

Lithium metal is registered in the European Chemical Agency in accordance with REACH.

