



TIKHVIN  
FREIGHT CAR BUILDING  
PLANT

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## HOPPER CAR FOR MINERAL FERTILIZERS AND GRAIN

A hopper car for mineral fertilizers is designed for transportation of mineral fertilizers (including aggressive), which require to be protected against atmospheric precipitations along 1520 mm gauge mainline railways.

Technical specifications	Car model 19-9835/ 199835-02	Car model 19-9835-01/ 19-9835-03	Car model 19-9870/ 19-9870-01
Payload capacity, t	71,0	71,0	76,5
Tare weight, maximum t	23,0	23,0	23,5
Service, yr	26 / 32	26 / 32	26 / 32
Body space, m <sup>3</sup>	101	101	101
Maximum estimated static load from the wheel set on rails, kN (tf)	230,5 (23,5)	230,5 (23,5)	245 (25)
Length over coupler pulling faces, mm	14720	14720	14720
Wheel base, mm	10500	10500	10500
Overall dimensions (gabarit) as per GOST9238-83			
–body	1-T	1-T	1-T
–bogie	02-BM	02-BM	02-BM
Number of loading hatches	4	4	4
Number of unloading gates	6	6	6
Bogie model	18-100	18-9810	18-9855
Run to the first roundhouse service, thousand (s) km	210	500	500

## DESIGN FEATURES

### 1 Car body

- The applied structural design allows to decrease the car weight and increase its payload capacity providing the required structural strength and reliability, lower the car center of gravity;
- The expanded body allows to transport the full range of mineral fertilizers with the total availability of the load capacity;
- Oversize dimensions of loading hatches improve the conditions for car loading operations;
- Application of vinyl copolymer coating provides reliable protection of the body against aggressive influence of the transported freight.

### 2 Coupler

The coupler is equipped with a modern shock absorbing device of T-1 class, which decreases the level of axial forces applied to the car, and an improved uncoupling arrangement, which prevents falling of the coupler on a track when it breaks and the situation is abnormal.

### 3 Brake system

The independent bogie braking system provides more advantageous braking conditions, possesses higher efficiency and reliability in comparison with the traditional braking system.

The braking system is fitted with advanced braking apparatuses which overhaul life is at least four years, fittings for threadless joints of brake lines, wear-resistant composite press material on the base of formaldehyde resins providing the run life at least 1 mln km.

### 4 Undercarriage

Application of bogies of models 18-9810 and 18-9855 (Barber S-2-R) improves the car dynamical characteristics, promotes safety during its operation, increases an overhaul run and decreases generally the life cycle cost.