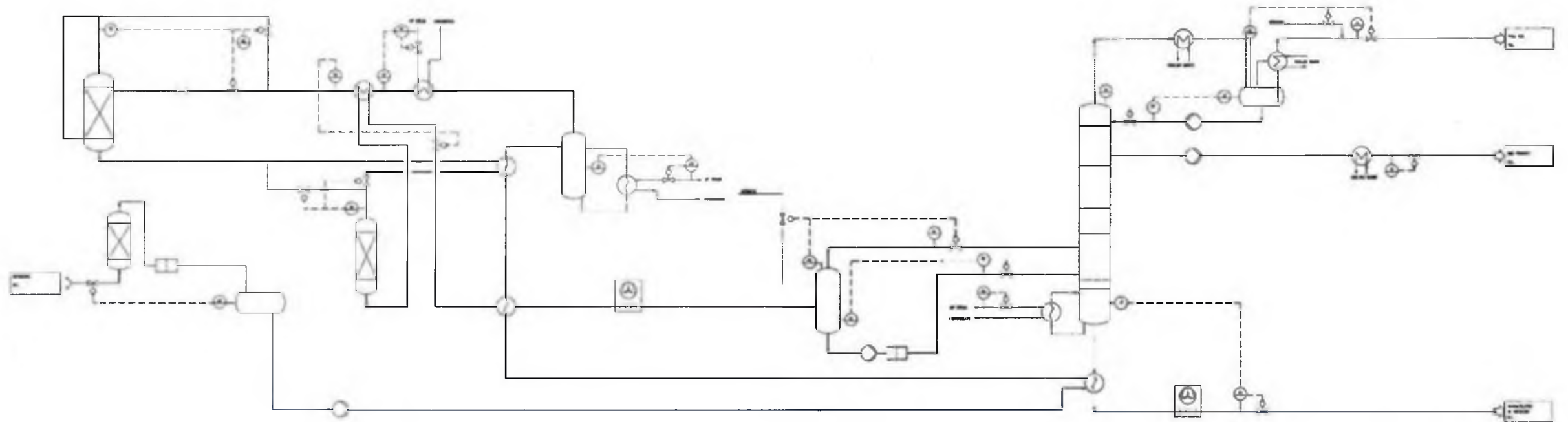




**DME Aerosol LLC –  
a new producer in the propellant market**



## Process Flow Diagram of the DME Plant

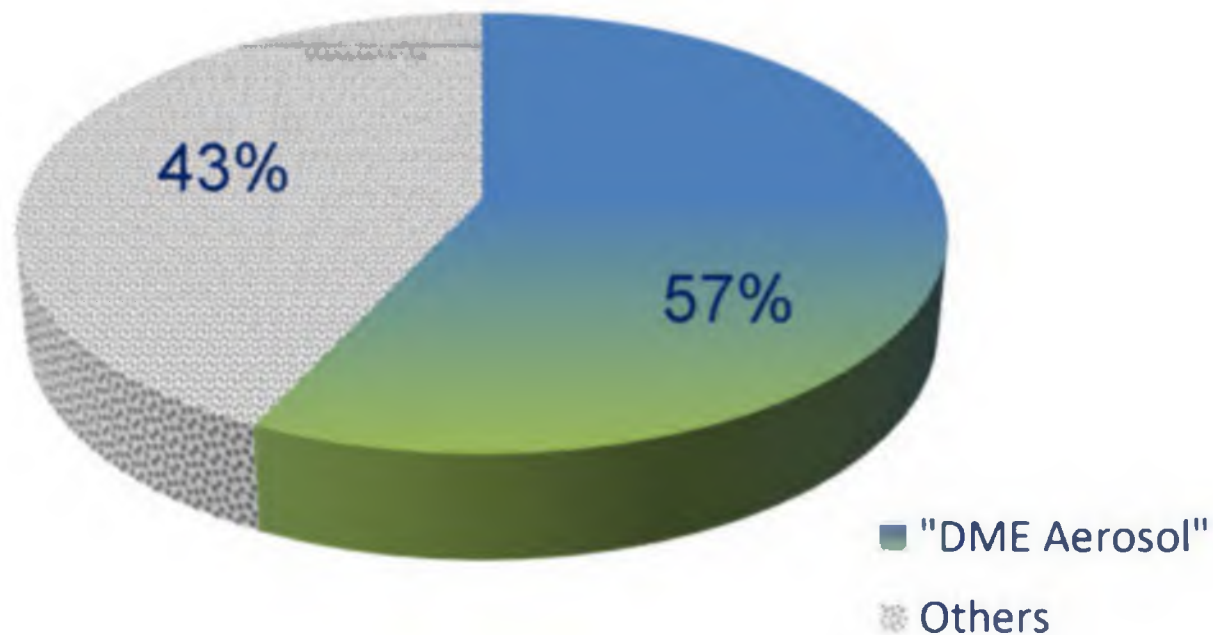


High-purity, aerosol grade dimethyl ether is produced by means of methanol dehydration with further DME distillation.

The plant capacity is **20,000 metric tons of DME per year**  
on the basis of in-house feedstock



## Russian DME Production Capacities



DME Aerosol LLC – Russian leader in production volume of high-quality DME.  
The unique process enables attainment of product purities of 99.99% - 99.999%



## DME for Polyurethane Construction Foam

Dimethyl ether is one of the most widespread propellants in production of polyurethane construction foams, since it enables manufacturers to complete two main tasks: **both propellant and solvent are injected at the same time.**

### The advantages of DME use:

- co-propellant;
- good solvent for the fluoropolymer;
- extends shelf life of the final product;
- regulates foam viscosity and structure;
- formulation with DME allows optimisation of winter compositions.



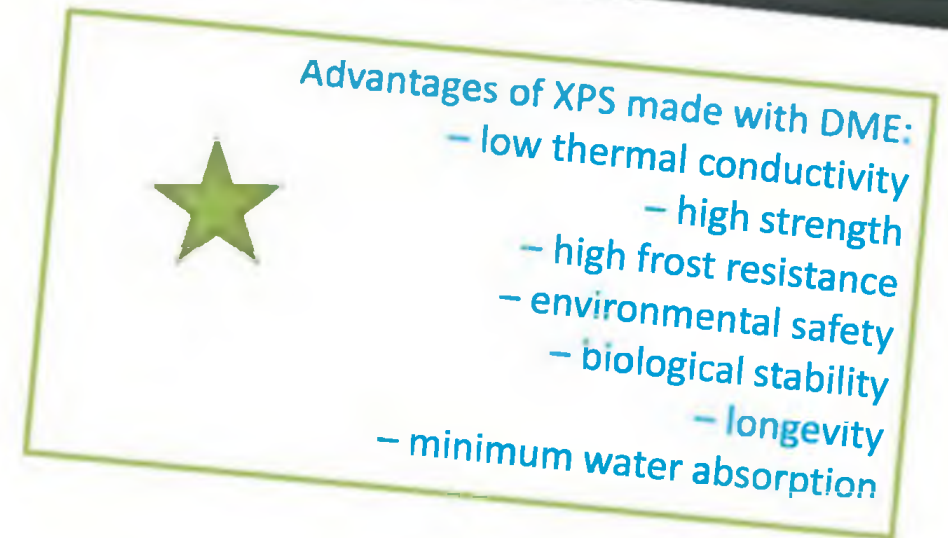


## DME for Extruded Polystyrene (XPS)

Due to its high propagation factor, dimethyl ether used in the production of XPS enables the production of boards to specified parameters at lower prime cost.

### The advantages of DME use:

- no need for other solvents (ethanol, acetone);
- possibility of replacing freon to reduce prime cost;
- high propagation factor enables the production of boards with lower density to reduce prime cost;
- possibility to produce boards of higher thickness (up to 100 mm and higher) with improved compressive strength;
- enhancement of heat insulation properties;
- increase of final product output;
- reduction of CO<sub>2</sub> emissions into the atmosphere.







## DME for Paint Aerosols/Auto Cosmetics

The main advantage of dimethyl ether lies in its solvency power, hence the reason why it is widely used as a propellant for paint aerosols and for enhancing certain product properties.

### The advantages of DME use:

- both propellant and solvent;
- faster drying due to fast evaporation;
- reduced occurrence of paint drips and streaks;
- finely dispersed spray pattern;
- formation of uniform film;
- less paint for same result;
- no odour;
- higher partial pressure compared to propane, butane.





## DME for Household Chemicals/Perfumery/Medical Aerosols/Repellents

Dimethyl ether offers the formulator a wide spectrum of possibilities, with good solvency power in respect of polymers, good miscibility with other solvents and propellants, and good water miscibility as key advantages.

### The advantages of DME use:

- perfect solvent for hairspray polymers, ensuring fine dispersion of propelled product;
- high compatibility with hydrocarbon propellants (propane, butane, propane/butane, pentane);
- finely dispersed spray pattern;
- Very high level of water solubility;
- no odour.





## Other Application Benefits of DME

### Defatting and/or desiccation of animal skins (leather tanning)

This process involves applying one or more solvents to the skins (hides) in order to defat and/or desiccate them. Dimethyl ether ensures enhanced treatment efficiency as a solvent used in the defatting and/or desiccation of a variety of hides including lamb, cow, goat and pig skins.







## Other Application Benefits of DME

### Coolant for refrigerating stations

Dimethyl ether mixed with ammonia (mass ratio 40%/60%) can be readily used in refrigeration equipment. The coolant designation is then R723.

Application of this mixture as a coolant increases the cooling capacity of the refrigerating station.

Limited solubility of mineral oil in R723 and the possibility of use in conjunction with copper (corrosion mitigation) will make a small-capacity station more effective than units operating with conventional coolants.

Plus, replacement of 40% of the ammonia in existing refrigeration facilities with DME reduces ammonia consumption with no loss of efficiency.





## The Advantages of DME Aerosol LLC

The production plant of DME Aerosol LLC is located in the center of Russia, in the Tula region, 180 km south of Moscow.

Due to its advantageous geographical location and a well-developed network of railways and highways, the company is well placed to ensure regular supplies and on-schedule delivery.

The company's extensive infrastructure also means it can load up tank containers right on site.

The company also employs skilled staff to manage the whole supply chain, from initial process to final delivery to the customer's site.





## DME Transportation

We have at our disposal our own 20 and 30 ft stainless steel tank containers to preserve product quality during transportation. Some of our fleet vehicles are also equipped with their own discharge pump and hose assembly.

We will consider a further increase in the number of tank containers at our disposal as business develops.

Where feasible on the production side, we will also consider shipment based on the technical equipment of the customer (retail package).



DME Aerosol LLC is looking to cooperate with companies and enterprises seeking new approaches to process development and productivity enhancement. Tel.: 8 (48751) 9-65-81  
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**THANK YOU !**