

# Modeling and solving an optimization problem of supply of chemical raw materials

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**Abstract:** In this article the optimization problem of supply of the chemical raw materials is solved in the following formulation. The trading company is specialized in the supply of the chemical raw materials to the industrial enterprises. The delivery is carried out by self - the transport of buyers. It is given the nomenclature data set of the chemical raw materials, the cost of its purchase, delivery and warehousing. The profit from the sale of each type of the chemical raw materials is fixed. The financial resources for the planning period are limited. In addition, on the basis of existing and potential customers orders for the planning period, the limits on the number of purchased raw materials of every kind were defined. How many of each type of the chemical raw materials is necessary to buy for the company to get the best profit under the condition that all the purchased raw materials will be sold in the planning period? The problem is solved by the method of the linear programming. At the same time a mathematical formulation of the problem is carried out. This means that the controlled variables and the target function of the problem are identified. Then, by means of these variables the objective function and constraints are described in the form of linear relations. [1-3].

**Keywords:** Quantitative methods in management, linear programming, numerical optimization, objective function, simplex method, Mathcad, Qbasic

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