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Control No. 493021  
EIC-D-395/1  
19 January 1960

ECONOMIC INTELLIGENCE COMMITTEE

MEMORANDUM FOR: EIC Representatives of USIB Agencies,  
the Department of Commerce, and the  
International Cooperation Administration

SUBJECT: Survey of Priority Deficiencies in Research on  
Sino-Soviet Bloc Merchant Marines (EIC-S-1 Series)

REFERENCE: EIC-D-395, 2 September 1959, same subject

1. In the EIC review of the above Priority Research Deficiency Survey, it was noted that the statement had not been coordinated with the EIC Subcommittee on Shipbuilding, which also had some interest in the field. At the request of the Army EIC representative the survey was coordinated with the Subcommittee on Shipbuilding and the comments of this Subcommittee were then forwarded to the EIC Subcommittee on Transportation for consideration. The Transportation Subcommittee has now considered and approved the inclusion of the suggestions of the Shipbuilding Subcommittee in subject research deficiency survey. Revised page 4 for the Survey of Priority Deficiencies of Research on Sino-Soviet Bloc Merchant Marines is forwarded herewith.

2. It is requested that you review the revised page in conjunction with the portions previously submitted to you and submit your comments and/or approval to the EIC Secretariat  by c.o.b. 27 January 1960.

Executive Secretary

Attachment  
as stated above

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**Nº 121**

**THE CHEMICAL INDUSTRY OF THE USSR**

November 1960

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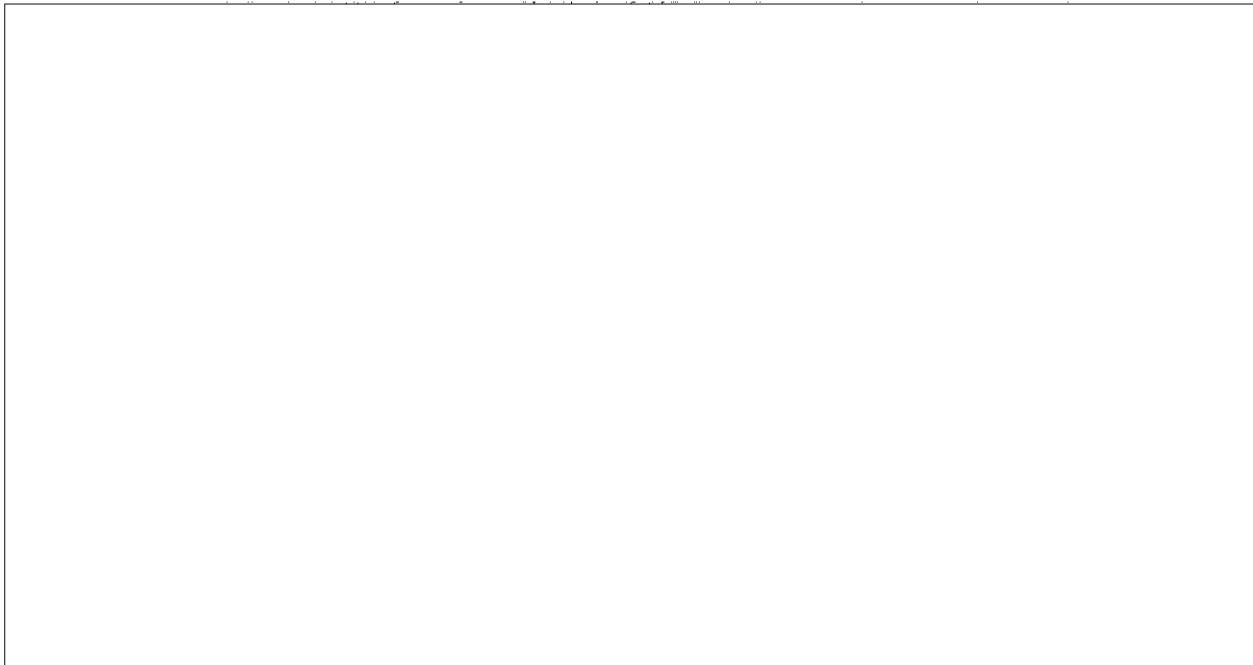
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THE CHEMICAL INDUSTRY OF THE USSR

I. General Background

The chemical industry of the USSR is now second only to that of the US and produces hundreds of different chemicals that are used in many branches of industry. Of particular importance from the point of view of intelligence is the contribution of the chemical industry to production of military end items. Chemicals are used extensively in production of propellants for guided missiles, materials for nuclear weapons, and explosives for conventional munitions as well as in production of parts for aircraft, missiles, and radar installations. In addition to such strategic uses, chemicals are used in large quantities in machine building, metallurgy, mining, petroleum refining, light industry, and agriculture.

Under the new Soviet Seven Year Plan (1959-65) an almost threefold growth is planned for the Soviet chemical industry. More than 100 billion rubles are to be invested in plants and equipment for the chemical and supporting industries. One hundred and forty new plants are to be built or completed, and 130 existing plants are to be modernized or expanded. Particular emphasis is to be placed on expansion of the petrochemical industry and on production of plastics, synthetic fibers, synthetic rubber, and other products from petrochemical raw materials.

Although the USSR is in a favorable position with regard to the raw materials required for the planned expansion of chemical production, the availability of chemical equipment and technology -- particularly for petrochemicals -- may prove to be a formidable obstacle to attainment of the planned goals. Strenuous efforts are being made by the USSR to purchase such technology and equipment from Free World countries, and some success has already been achieved.

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## II. Missile Propellants

### A. Background

Although Soviet statements about the fuel that is used to launch Soviet earth satellites and intercontinental ballistic missiles are vague and may be applied to many types of fuels, it is believed that the thrust for these rockets is provided by a liquid propellant system. Some of the fuels and oxidizers that may be used or may be under development are as follows: kerosine, alcohol, hydrazine and other amines, liquid oxygen, ozone, nitric acid, hydrogen peroxide, fluorine, boron, and lithium compounds.

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*from IC statement*

III. Nuclear Energy Chemicals

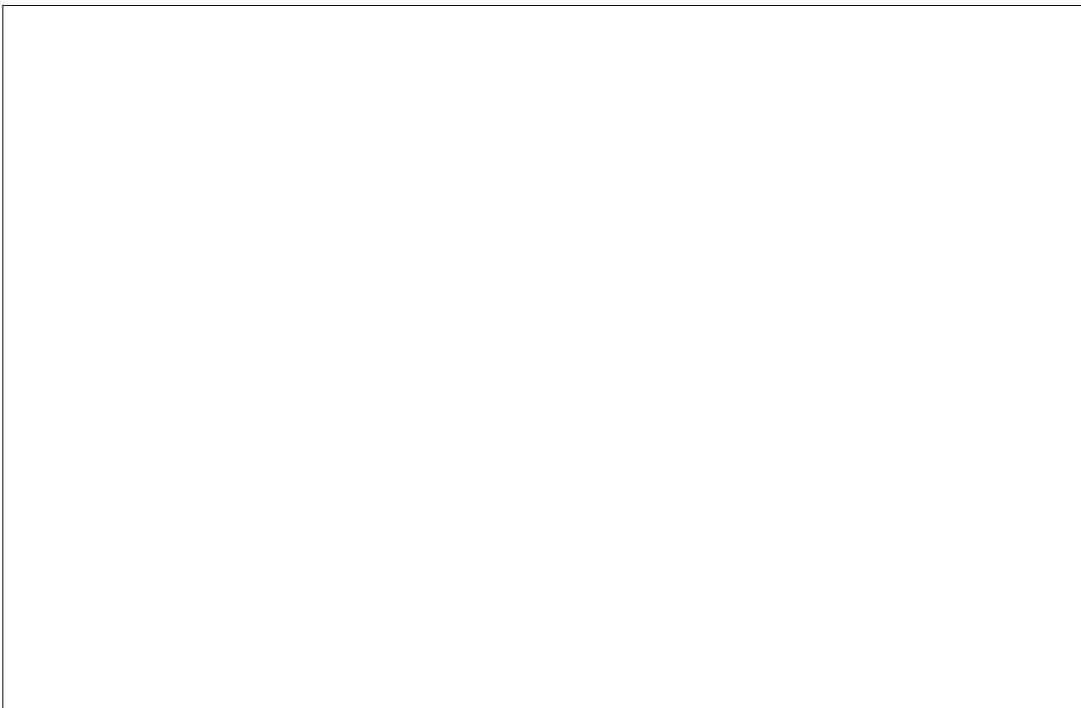
The following three groups of chemicals have considerable potential as qualitative and quantitative indicators of the nature of the Soviet nuclear energy program: fluorine, hydrofluoric acid, and fluorspar; calcium and calcium chloride; and lithium, lithium compounds, and lithium ores.

A. Fluorine, Hydrofluoric Acid, and Fluorspar

1. Background

The consumption of hydrofluoric acid and fluorine in a nuclear energy program is related to the output of fissionable materials. Unfortunately there is no direct information on production or consumption of hydrofluoric acid or fluorine in the USSR. This situation has necessitated reliance on analysis of information on supply and consumption of fluorspar in the USSR as the only practical approach to an estimate of the amounts of hydrofluoric acid and fluorine available to the nuclear energy program.

Available information on hydrofluoric acid provides little indication of the level of production but does suggest that hydrofluoric acid is produced at the following plants:



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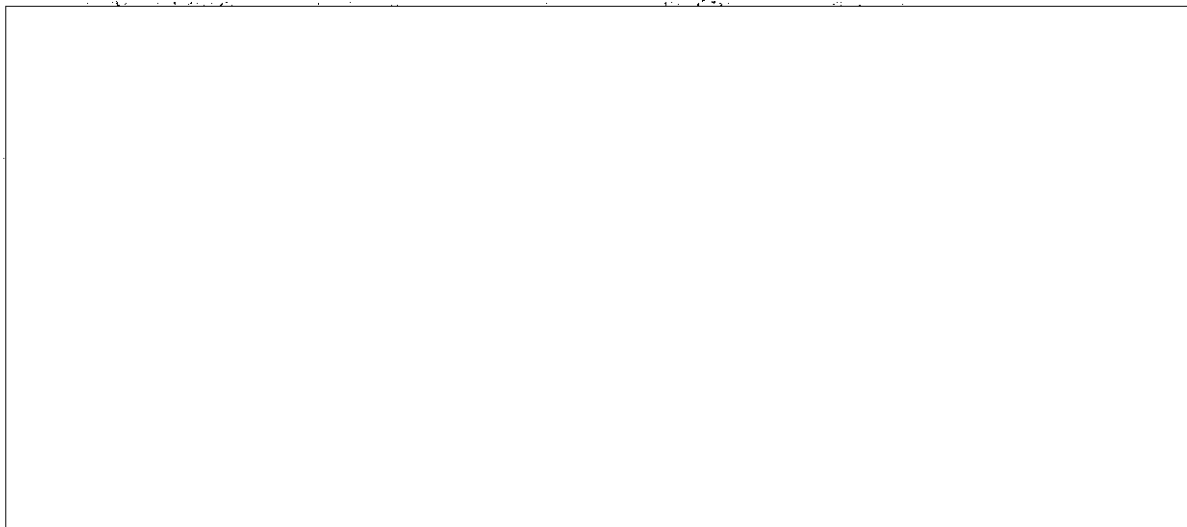
IV. Petrochemicals

A. Plastics and Chemical Fibers

1. Background

The USSR reportedly ranks fifth in the world in production of plastics and sixth in production of chemical fibers. A rapid expansion is planned for these industries during the period of the Seven Year Plan (1959-65), when about one-half of the 100 billion to 105 billion rubles planned for investment in the chemical industry is to be used to construct enterprises for production of plastics, chemical fibers, synthetic rubber, and alcohol. Achievement of the expansion planned in these fields probably will depend to a large extent on Soviet success in obtaining technology and equipment from the West. During recent months the USSR has been trying to purchase technology and plants of the above types from the West and has been partially successful.

The available information on production of plastics in the USSR is inadequate. One Soviet source states that 206,000 metric tons were produced in 1957, and another gives 243,500 metric tons. It is probable that neither figure is suitable for comparison with US production, for it is believed that the reported Soviet production includes sizable quantities of fillers, plasticizers, and other materials. For example, one report states that production of fluorocarbons and related products in 1957 was 20,000 metric tons. The large size of this figure in relation to the estimated small size of current Soviet production of fluorocarbon plastics raises the question of what materials are included in this category and what actual amounts of fluorocarbon are produced.



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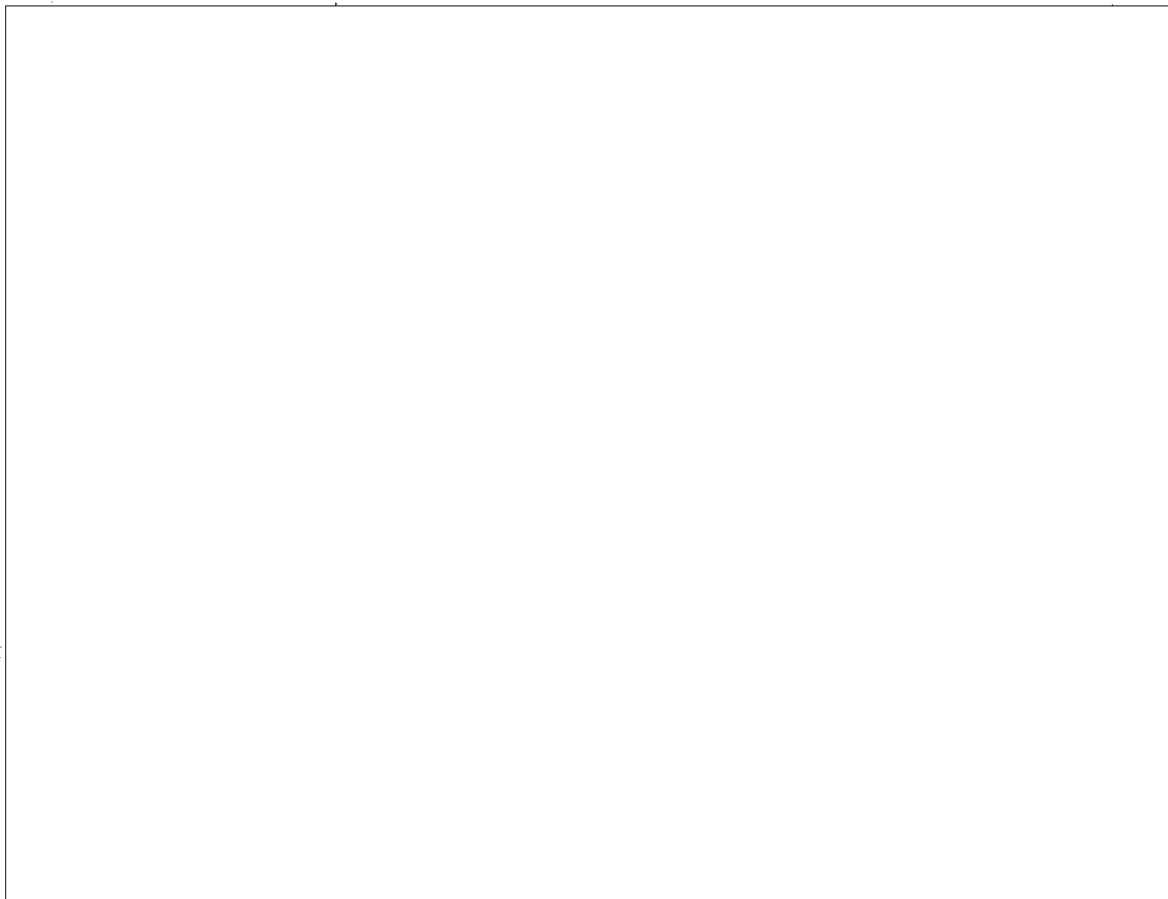
V. Investment Plans for the Development of the Chemical Industry

A. Background

The USSR plans to invest more than 100 billion rubles in the development of the chemical industry during the period of the Seven Year Plan. It has been reported that about one-half of the investment in the chemical industry in this period is scheduled for the construction of enterprises for production of plastics, chemical fibers, synthetic rubber, and alcohol.

The USSR has announced plans for the increase in production (1965 above 1958) of a limited number of chemical products, including synthetic rubber, plastics, chemical fibers, mineral fertilizers, and ethyl alcohol.

The Ministry of the Chemical Industry was replaced in 1958 by the State Committee of Chemistry attached to the Soviet of Ministers. Little is known of the functions and responsibilities of the new Committee.



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