

7  
50X1-HUM

CLASSIFICATION S-E-C-R-E-T  
CENTRAL INTELLIGENCE AGENCY  
INFORMATION FROM  
FOREIGN DOCUMENTS OR RADIO BROADCASTS CD NO.

COUNTRY USSR DATE OF INFORMATION 1951  
SUBJECT Scientific - Chemistry; Technological  
HOW PUBLISHED Monthly periodical; daily newspaper DATE DIST. 13 Jul 1951  
WHERE PUBLISHED Moscow NO. OF PAGES 3  
DATE PUBLISHED Feb 1951  
LANGUAGE Russian SUPPLEMENT TO REPORT NO.

THIS DOCUMENT CONTAINS INFORMATION AFFECTING THE NATIONAL DEFENSE OF THE UNITED STATES WITHIN THE MEANING OF ESPIONAGE ACT 50 U. S. C. 31 AND 32, AS AMENDED. ITS TRANSMISSION OR THE REVELATION OF ITS CONTENTS IN ANY MANNER TO AN UNAUTHORIZED PERSON IS PROHIBITED BY LAW. REPRODUCTION OF THIS FORM IS PROHIBITED.

THIS IS UNEVALUATED INFORMATION

SOURCE Periodical and newspaper as indicated.

ZELINSKIY, NOTED CHEMIST.  
ADVANCES SOVIET MILITARY, AVIATION SCIENCE

CONTRIBUTES TO NUCLEAR PHYSICS, RADCOM IMPROVEMENT - Moscow, Tekhnika-Molodezhi, Feb 51

The USSR is celebrating the 90th anniversary of the birth of Academician Nikolay Dmitriyevich Zelinskiy.

In his youth Zelinskiy specialized in organic chemistry, studying at Leipzig and Goettingen. He later undertook the synthetic production of the basic types of native hydrocarbons. He solved in principle and practice the problems of composition of all the Russian petroleum. He and his students succeeded in breaking down the barriers between the various classes of hydrocarbons, which up to that time had seemed insurmountable.

When the poisonous gas yperite was used in World War I, Zelinskiy in 1915 developed his own famous antigas preparation, the first in the world, using a highly developed surface of activated carbon to absorb the poisonous gases.

In 1918, Zelinskiy worked out a method of getting aviation gasoline, not from petroleum, but from its waste products, for use in Soviet planes. He devoted much effort to the development of contact reactions in organic chemistry, and worked out new methods of converting fatty-series hydrocarbons into cyclic compounds, which comprise high-quality benzines, alcohols, acids, and other such substances. It was in Zelinskiy's laboratory that the chemical composition of the gasoline used by the Soviet fliers in their historic flight over the North Pole was studied.

Zelinskiy has done research on the activity of sulfur bacteria and the structure of large albumin molecules. He has clarified the ring structure of many basic types of albumins. Zelinskiy's work on the absorption spectrum of the vapors of different substances, continued by other great Soviet physical chemists such as Academician Terehin and Professor Kondrat'yev is closely connected with recent successes in nuclear physics.

- 1 -

SECRET

CLASSIFICATION

S-E-C-R-E-T

STATE	<input checked="" type="checkbox"/>	NAVY	<input checked="" type="checkbox"/>	NSRB		DISTRIBUTION							
ARMY	<input checked="" type="checkbox"/>	AIR	<input checked="" type="checkbox"/>	FBI									

**SECRET**S-E-C-R-E-T

50X1-HUM

Beginning with the use of high pressures for catalytic reactions, Zelinskiy went further in this direction. It was at his initiative and under his direction that the High Pressures Laboratory of the Organic Chemical Institute, Academy of Sciences USSR, was created.

Zelinskiy is devoting most of his efforts to key problems in organic chemistry, where he is achieving extraordinary results. The results of his researches are being seized upon by the chemical industry of the USSR, which has developed in its entirety since the October Revolution. Even at the outbreak of the last war, the output of the old-time Russian chemical plants was only 4 percent of the total output of the chemical industry of the USSR. At this time also, 80 of the known 92 chemical elements were being utilized by socialist industry, whereas up to the time of the October Revolution, only 20 were in use.

New Catalysts and catalytic reactions were discovered by Zelinskiy. He visited plants and factories, helping them to introduce these innovations into their production. His discoveries in the field of catalysis have been widely used in industry throughout the world.

Zelinskiy created a new type of synthetic rubber which is being used in all fields.

At the very beginning of the war, Zelinskiy completed a series of tasks which were of immediate military significance. In 1942 he was first on the list of innovators in science and technology to receive the Stalin Prize, awarded for his work in 1940 - 1941.

Whole generations of Soviet chemists have been trained by Zelinskiy. His students included L. Chugayev and V. Khlopov, eminent chemists, the work of whose schools promoted the development of the Soviet platinum and radium industries.

The work of such students of Zelinskiy as B. A. Kazanskiy, A. N. Nesmeyanov, N. I. Shuykin, L. F. Vereshchagin, M. B. Turov, and many others is of great importance.

DEVELOPS ANTIGAS DEFENSE, SYNTHETIC RUBBER -- Moscow, Vecheruzhaya Moskva, 6 Feb 51

For 65 of his 90 years, Zelinskiy has devoted himself to the study and teaching of various branches of chemistry. Although specializing in organic chemistry, he has contributed to the development of inorganic, analytic, and physical chemistry, biochemistry, geochemistry, geology, biology, and medicine.

In 1890 Zelinskiy participated in a deep-sea expedition to study the Black Sea. He showed then, for the first time, the source of bacteria in its hydrogen sulfide. He also carefully studied the deposits of sapropelite on the shores of Lake Balkhash, and from its tar content obtained a high-quality kerosene and paraffin. He also discovered a method of removing the sulfur from petroleum. As a result, its composition was improved, and the sulfur was used industrially.

In an antigas preparation developed by Zelinskiy in World War I, he used wood charcoal for absorbing the poisonous gases. He then began to study other properties of charcoal, and demonstrated the beneficial effect of charcoal on the gastric juice.

In 1918, when Soviet Russia was cut off from petroleum sources, Zelinskiy was confronted with the task of obtaining aviation gasoline from mazut and solar oil. He developed a high-quality synthetic gasoline. He also proposed a new method of coking coal. By this method, the production of valuable fuel oils from coal tars and petroleum resins was initiated. Reactions are being carried out

- 2 -

S-E-C-R-E-T**SECRET**

**SECRET**S-E-C-R-E-T

50X1-HUM

on a wide scale in Soviet plants with the assistance of the catalysts prepared by Zelinskiy's method. The work of Soviet chemists under the leadership of Zelinskiy has led to the development of sovpreen, a synthetic rubber, and a number of other discoveries which have great theoretical and practical significance.

Zelinskiy has for many years directed the oldest of scientific organizations, the Moscow Society of Investigators of Nature.

In 1945, Zelinskiy was given the title of Hero of Socialist Labor for his outstanding scientific activity. He won the Stalin Prize three times for his work in the chemistry of carbohydrates and albumin.

- E N D -

- 3 -

S-E-C-R-E-T**SECRET**