

USSR/General and Special Zoology. Insects. Injurious In- 2  
sects and Ticks. Pests of Cereal Crops

Abs Jour : Ref Zhur - Biol., No 11, 1958, No 49568

empty storehouses. The new generation did not  
succeed in completing its development in the  
period between the waxy ripeness and the harvest  
of grain crops. -- A.P. Adrianov

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SMOL'YANINOVA, N.M.; KAPLIN, A.A.; VASIL'YEVA, L.M.

Stability of coke in the hot state. Koks i khim. no. 5:25-28 '61.  
(MIRA 14:4)

1. Tomskiy politekhnicheskii institut (for Smol'yaninova, Kaplin).
2. Sibirskoye otdeleniya AN SSSR (for Vasil'yeva).  
(Coke—Thermal properties)

OSTASHEVSKAYA, N.S.; PAK GYM-SUN; TYUNTIKOV, B.K.; VASIL'YEVA, L.M.;  
FEDINA, Ye.Z.; LOSKUTOVA, Ye.N.

Mechanism of the coking of noncaking coals under pressure. Trudy  
Khim.-met.inst.Sib.otd. AN SSSR no.18:54-64 '63. (MIRA 17:4)

I 7539-66 ENT(m)/EPF(c)/EWP(t)/EWP(b) LJP(c) JD/JG/WB

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TITLE: Properties of scandium phosphide

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 9, 1965, 1493-1497

TOPIC TAGS: phosphide, scandium compound, corrosion resistance, physical chemistry property

ABSTRACT: Scandium phosphide was obtained by direct reaction of metallic scandium and red phosphorous. The substances were mixed in powder form in a quartz ampoule. A table shows the detailed temperature conditions used for the reaction. The resulting fine black powder was analyzed for scandium and phosphorous. The article gives a diagram of the analytical apparatus and the results of analysis in tabular form. X-ray analysis was done by the powder method. The x-ray photos were taken with a RKD-86 camera with filtered copper irradiation.

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The scandium phosphide obtained had a crystal structure of the sodium chloride type with  $a = 5.302 \pm 0.005$  kX,  $Z=4$ . Its density at 20C was 3.33 grams/cm<sup>3</sup>. The compound was thermally stable during heating in a high vacuum ( $10^{-4}$  mm Hg). It underwent no polymorphic transitions in the interval from 20 to 1500C and did not melt up to 2000 C. However, during heating above 1000 C, even in a high vacuum, the surface of the sample oxidized with the formation of scandium phosphate. In air, scandium phosphide begins to oxidize noticeably above 350C. A sample held in air at 1200 C to constant weight, increases in weight by 79%. X-ray analysis of the oxidized sample shows the lines characteristic of anhydrous ScPO<sub>4</sub>(scandium phosphate) with the parameters  $a=6.578 \pm 0.003$ Å,  $c=5.795 \pm 0.005$ Å. The chemical resistance of scandium phosphide was investigated in water, acids (HCl, H<sub>2</sub>SO<sub>4</sub>, and HNO<sub>3</sub>), and alkalis (25 and 50% solutions of NaOH) of different concentrations. Results are shown in a table. In general, scandium phosphide was found to be resistant to water and alkaline solutions, but to be easily decomposed by acids. Orig. art. has: 2 figures and 5 tables

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