HEAT OF VAPORIZATION OF HYDROGEN FLUORIDE

Duration of run, min.	Energy input volts	Energy input amp.	Weight HF vaporized, g.	Correction,[a] g. HF	Heat of vaporization, cal.
76	2.08	0.145	3.4850	0.4630	109
62	2.09	.145	4.4331	1.2200	84
37	2.53	.175	2.4444	0.3901	114
41	2.62	.185	4.2252	.6540	80
20	2.46	.175	1.7732	.3188	85
17	2.83	.200	1.4280	.2713	119
The above runs represent preliminary work					
Barometric pressure 750 mm.				Average	98
30	2.88	0.200	2.4759	0.0762	103
30	2.52	.175	2.1602	.1875	96
30	2.15	.150	1.5765	.1754	99
30	1.806	.125	1.2395	.1952	93
30	1.57	.110	0.9883	.1952	94
29.25	2.14	.150	1.4279	.0815	100
Barometric pressure 748 mm.				Average	97.5

Calculated heat of vaporization per gram = 6025/63.36 = 95.

[a] This correction factor is obtained experimentally. It is the amount of hydrogen fluoride vaporized by the heat leak for the same time as the duration of the run.

Summary

The heat of vaporization of hydrogen fluoride has been determined experimentally and found to agree with the value calculated from the vapor pressure and vapor density measurements.

EVANSTON, ILLINOIS

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Notes

A Method for the Preparation of Telluric Acid

BY L. I. GILBERTSON

Gutbier, and Gutbier and Wagenknecht,[1] prepared tellurates by the oxidation of tellurium or tellurous oxide with 15% hydrogen peroxide in solution of strong alkalies. Schluck[2] oxidized tellurium with 60% hydrogen peroxide to form telluric acid.

The oxidation of tellurium and tellurous oxide is accomplished readily in sulfuric acid solution by 30% hydrogen peroxide. Best oxidation is obtained when a mixture of two volumes of 30% hydrogen peroxide with one volume of concentrated sulfuric acid (the mixture being prepared at 0°) is refluxed with the sample. The active oxidizing agent is permonosulfuric acid.[3]

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(1) Gutbier, *Z. anorg. Chem.*, **42**, 174 (1904); Gutbier and Wagenknecht, *ibid.*, **40**, 260 (1904).

(2) Schluck, *Monatsh.*, **37**, 489 (1916).

(3) *Northwest Science*, **6**, No. 3, 108–109 (1932).

To prepare telluric acid, tellurium (or tellurous oxide) was refluxed with the solution of hydrogen peroxide and sulfuric acid until dissolved and active effervescence of oxygen had ceased. The solution was filtered on asbestos and evaporated to incipient crystallization. Concentrated nitric acid was added to precipitate ortho-telluric acid, which was filtered off on asbestos. After heating to decompose the remaining nitric acid, the residue was dissolved in hot water, filtered and recrystallized. Telluric acid prepared in this manner showed no qualitative indication of sulfates or nitrates.

Anal. Calcd. for oxygen to oxidize HCl, 6.97. Found, 6.95. Calcd.: tellurium, 55.54. Found, 55.56.

THE STATE COLLEGE OF WASHINGTON
PULLMAN, WASHINGTON

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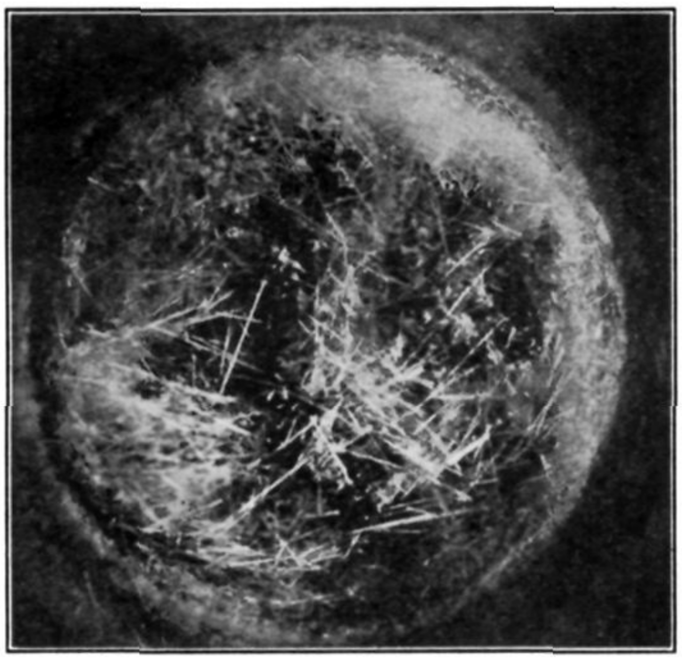
Needle-Shaped Crystals of Sodium Chloride

BY W. S. HINEGARDNER

A few weeks before the appearance of the note,[1] "Needle-Shaped Crystals of Sodium Chloride Obtained by Percrystallization," the writer noticed a thick mat of fine needle-shaped crystals covering a semi-dry silica gel which had been set aside in a beaker covered with a watch glass. Analysis for chlorine, as well as solubility and taste, indicated practically pure sodium chloride. The needles under these conditions developed usually to a length of 2–2.2 cm. The accompanying photograph shows the masses of needles that formed on the gel in one of the beakers.



Sodium chloride needles forming on fractured silica gel in a beaker.

The gel was prepared from sodium silicate solution of specific gravity 1.118, made from crystalline hydrated sodium silicate, and 3 N hydrochloric acid. The needles appeared after the unwashed gel had dried sufficiently to fracture. Other specimens which have since dried sufficiently produced similar masses of the same needle-shaped sodium chlo-

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[1] Henry Tauber and Israel Kleiner, THIS JOURNAL, **54**, 2392 (1932).

ride crystals. The phenomenon is evidently a case of percrystallization, the outer layers of silica gel replacing the collodion membrane.

We have been unable to find the formation of needles of sodium chloride under these conditions mentioned in the literature. Experiments have been started to determine if the substitution of hydrobromic or hydriodic acid for the hydrochloric acid will give needles of sodium bromide or sodium iodide.

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A Beaker for Quantitative Analysis

BY G. P. BAXTER

In handling precipitates the quantitative analyst is frequently troubled as to the disposal of the stirring rod once filtration is commenced. If it is rested in the lip of the beaker, there is danger of transfer of precipitate from the lip of the beaker to the upper part of the stirring rod. If the stirring rod is rested at any other point on the rim of the beaker, it interferes with the cover glass. This difficulty may be avoided if the beaker has *two* lips, one of which is used entirely for pouring, the other for the stirring rod. The two lips may be distributed, of course, in any desired way, but symmetrical distribution is less convenient than unsymmetrical, for instance 90° apart, because of the difficulty of identification. If the lips are of different shape identification would be simple in any case. Beakers of this type have been found extremely convenient in quantitative analysis, and doubtless would be useful for other purposes. This idea is obviously equally applicable to glass dishes and porcelain vessels.

DEPARTMENT OF CHEMISTRY
HARVARD UNIVERSITY
CAMBRIDGE, MASSACHUSETTS

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