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The Precise Determination of Sulfates

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THE PRECISE DETERMINATION OF SULFATES

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Experimental evidences are presented to support the necessity of precipitating barium sulfate by the addition of the sulfate to barium chloride rather than in the reverse order as is usually recommended. Factors such as loss due to creeping of the precipitate, temperature and time of digestion, heating of the barium sulfate to constant weight, and others were very carefully controlled. Data are given showing the results obtained using potassium, sodium, ammonium, and hydrogen sulfates. An explanation is offered why the results are low when the usual order of precipitation ($BaCl_2$ to the sulfate) is followed. Microphotographs of barium sulfate obtained by different methods and under varying conditions are given.

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THE TEMPERATURE EFFECT ON THE SOLUBILITIES OF NICKEL, TIN, COPPER, STEEL (CHROMIUM) AND ZINC IN RAW COW'S MILK

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The polished strips of metal were agitated by means of a device constructed to simulate plant conditions as nearly as possible. The losses in weight per square decimeter per thirty minute exposure recorded represent averages of eight to twenty-four determinations under the experimental conditions.

TEMPERATURE °C	AVE. LOSS IN WEIGHT IN MG. PER SQ. DM.				
	NICKEL	TIN	COPPER	STEEL (CR.)	ZINC
	mg.	mg.	mg.	mg.	mg.
30	1.22	0	0.258	0	0.432
45	3.442	0	0.671	0	0.897
55	4.31	0	1.032	0	1.288
65	5.42	0	1.333	0	1.534
75	6.54	0	1.582	0	1.78
85	5.17	0.378 gain	1.892	0	1.546
95	1.22	0.516 gain	1.788	0	1.03

The solubility curves for nickel, copper and zinc show a maxi-