

GEORGIA INSTITUTE OF TECHNOLOGY

ENGINEERING EXPERIMENT STATION

ATLANTA 13, GEORGIA

December 11, 1961

Republic Chemical Corporation
1002 Lawton Avenue, S. W.
Atlanta 10, Georgia

Attention: Dr. Harry J. Robertson, President

Subject: Characterization of Gelatin Sample



I. General Chemical Characterization

Moisture	7.60%
Total Nitrogen	15.17%
Total Phosphorus (P)	0.37%
Total Acidity (as citric acid)	3.68%
Acetate (volatile as acetic acid)	1.35%
Ash	3.97%

Semi-quantitative spectrographic analysis of ash:

Calcium	Major
Iron	Major
Magnesium (Mg)	Major
Sodium (Na)	Major
Aluminum (Al)	1.0 - 10.0%
Copper (Cu)	1.0 - 10.0%
Nickel (Ni)	1.0 - 10.0%
Phosphorus (P)	1.0 - 10.0%
Chromium (Cr)	0.1 - 1.0%
Manganese (Mn)	0.1 - 1.0%
Molybdenum (Mo)	0.1 - 1.0%
Silicon (Si)	0.1 - 1.0%
Vanadium (V)	0.1 - 1.0%
Tin (Sn)	0.01 - 0.1%
Titanium (Ti)	0.01 - 0.1%

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II. Amino Acid Distribution

Hydroxyproline	10.99%
Aspartic	5.61%
Threonine	2.27%
Serine	2.85%
Glutamic	10.43%
Proline	11.62%
Glycine	22.10%
Alanine	9.03%
1/2 Cystine	Less than 0.03%
Valine	2.45%
Methionine	1.27%
Isoleucine	1.75%
Leucine	3.33%
Tyrosine	0.72%
Phenylalanine	2.20%
Hydroxylysine	1.24%
Lysine	3.84%
Histidine	0.75%
Ammonia	1.15%
Arginine	7.74%

Sample dried to constant weight. Hydrolysis in evacuated sealed tube with constant boiling HCl for 16 hours at 110° C.

III. Particle Size Distribution

<u>Diameter (microns)</u>	<u>Percent by Number Less than Diameter</u>
2	Less than 0.05
3	0.8
4	2.2
5	4.4
6	7.1
7	10.9

(Continued)

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III. Particle Size Distribution (continued)

<u>Diameter (microns)</u>	<u>Percent by Number Less than Diameter</u>
8	15.8
9	21.5
10	27.3
12	38.5
14	48.4
16	56.6
18	63.5
20	69.2
25	79.8
30	86.3
35	90.5
40	93.4
50	96.6
60	98.3
70	99.0
80	99.3
90	99.6
100	99.8

Respectfully submitted,



W. H. Burrows, Head
INDUSTRIAL PRODUCTS BRANCH

WEB:pjb