No. 1

# THE REVIEW OF PHYSICAL CHEMISTRY

### OF JAPAN

Founded in 1926

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### THE REVIEW OF PHYSICAL CHEMISTRY OF JAPAN

### (Butsuri-Kagaku no Shinpo)

Found in 1926

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Purchase Order should be addressed to: Maruzen Co., Ltd., Nihonbashi, Chuo-ku, Tokyo, Japan.

### Published by

### THE PHYSICO-CHEMICAL SOCIETY OF JAPAN

(Nippon Butsuri-Kagaku Kenkyu Kai)

Faculty of Science, Kyoto University, Kyoto, Japan

Printed by KAWAKITA INSATSU CO., Kyoto, Japan



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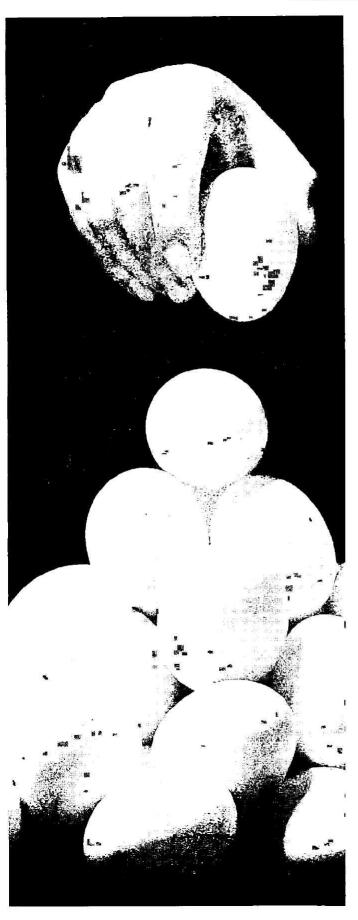
|                                 | NaCl  | KCI   | KBr   | KI    | LiF   | AgCl                   | KRS-5* | KRS-6* | CsI   |
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| Limit of transparancy (microns) | ~15   | ~21   | ~27   | ~31   | ~6    | ~30                    | ~40    | ~34    | ~70   |
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| Solubility:**                   | 35,7  | 28.5  | 53.5  | 127.5 | 0.27  | 8.9 × 10 <sup>-1</sup> | 0.02   | 0.32   | 44    |
| Specific gravity:<br>gr/cm³     | 2.16  | 1.59  | 2.75  | 3.13  | 2.64  | 5.56                   | 7.2    | 7.19   | 4.53  |
| Melting point: "C               | 801   | 776   | 730   | 680   | 843   | 455                    | 415    | 424    | 621   |
| Maximum diameter:               | 1 20  | 120   | 1 20  | 120   | 100   | 60                     | 60     | 60     | 60    |
| Maximum height:<br>mm           | 100   | 100   | 100   | 70    | 60    | 100                    | 60     | 100    | 100   |

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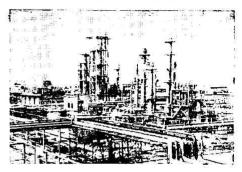
<sup>\*\*</sup> g/100 gr water at normal temperature.



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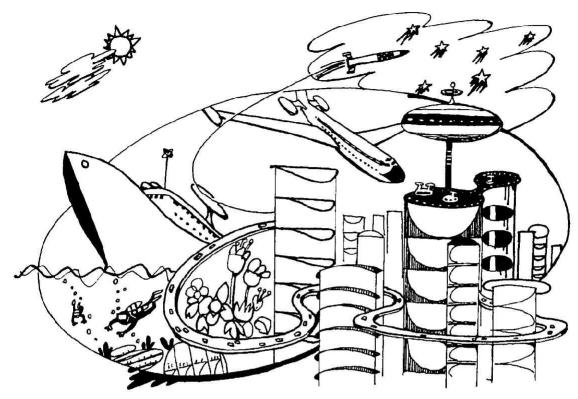
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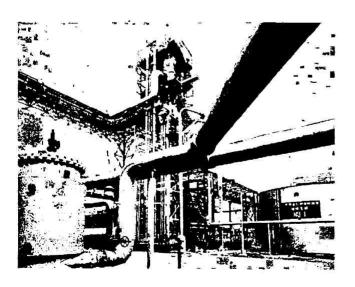
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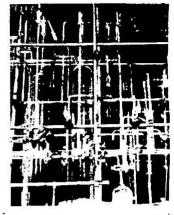
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Set to go on-stream in mid-1969, MITSUI TOATSU's new facility in Osaka will be the largest single-train urea plant ever built. It employs the latest MITSUI TOATSU Urea Process—the Total Recycle C-Improved Process.

MITSUI TOATSU Urea Processes are now in use in 37 plants in 19 countries, with an additional 12 more plants now under construction. World-wide, the production capacity of these plants is reaching to some 8.2 million tons of urea annually—one third of the world's urea capacity.

On October 1st, 1968, Toyo Koatsu merged with Mitsui Chemicals and changed its name to MITSUI TOATSU CHEMICALS, INC.



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Laboratories: Tokyo (Technical Research Laboratory)
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Asahi's history dates as far back as 1923 when the late Mr. Jun Noguchi, who was the first president of the company, erected a synthetic ammonia plant in Nobeoka, present site of the company's major plants. This is a memorable plant in that the first commercial production of synthetic ammonia in the world by the Casale process was successfully started at this plant.

Thereafter Asahi's production activity continued to expand, with the exception of the war years, into great many fields. Using ample electric power from its own power plants and standing on the firmly established basis that primary raw materials are available within the company, Asahi has been producing chemical fibers, synthetic resin, explosives, chemical fertilizers, chemical seasoning, industrial nitrocellulose and several scores of chemicals of ammonia, soda and chlorine derivatives.

This fact points up to Asahi's special feature as a chemical company. Asahi ranks first in the production of viscose rayon in Japan and its cuprammonium rayon capacity is largest in the world. Using acrylonitrile monomer produced by Sohio process at its Kawasaki plant, Asahi produces polyacrylic fiber "CASHMILON" by its own process. Production acrylonitrile monomer and of polyacrylic fiber is also the largest in

Japan. Asahi's chemical seasoning (monosodium glutamate) AsahiAji, MITASU, ranks second in output of similar chemical seasonings. Sun-Nitro, Asahi's unique chemical fertilizer, is building up for itself a spectacular sales. Asahi's industrial nitrocellulose and electrolytic soda production is the largest in Japan. Asahi is also at the top in production volume of all the explosives manufacturers in Japan. Recently Asahi launched into three new fields of operation, i.e. nylon 6, synthetic rubber polybutadiene "ASADENE" and new building material "HEBEL".

At present, Asahi's products are exported to 50 different countries. Export of the process is also making headway. Worthy of mention in this connection is the export of viscose rayon manufacturing techniques to the Baroda Rayon Corporation, India, and Dawood Industries Limited, Pakistan, and of polyacrylic fiber manufacturing techniques to ANIC S. p. A., Italy. Through all these activities, the excellence of Asahi's techniques is highly evaluated.

Asahi now has many powerful affiliates, including Asahi-Dow Limited and Shin Nihon Chemical Industry Co., Ltd. and is proceeding on the road to further growth as a multiple-purpose chemical company.