

GRACE CONFIDENTIAL

CONSOLIDATED MONTHLY SUMMARY

MARCH 1971

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RESEARCH DIVISION



Washington Research Center, Clarksville, Maryland 21029

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MONTHLY REPORT FOR MARCH 1971

CONSOLIDATED EDITION

GRACE CONFIDENTIAL

NOT TO GO OUTSIDE U.S.

This report contains information on the following activities
at the Washington Research Center.

INORGANIC RESEARCH

- I-1 AUTO EMISSIONS CATALYST
- I-2 ACTIVITY OF CLAY-ENZYME COMPLEXES
- I-3 BONDED VERMICULITE BOARD
- I-4 LEAF AUTOMATION
- I-5 RECYCLE FUELS
- I-6 UNIT OPERATIONS
- I-7 ALFALOX CUTTING TOOLS
- I-8 EXPLORATORY
- I-9 ELECTRONIC SUBSTRATES

ORGANIC RESEARCH

- O-1 GLYCINE AND LACTAMIDE PROCESSES
- O-2 RELEASE COATINGS
- O-3 WET STRENGTH RESINS
- O-4 PLASTAMIC/DARAMIC DEVELOPMENT
- O-5 ADDITIVES TO POLYOLEFINS
- O-6 SODIUM PERBORATE/SODIUM GLUCOHEPTONATE
- O-7 CAN END ADHESIVES
- O-8 SYNTHETIC TACKIFYING RESINS
- O-9 FOAM STUDIES
- O-10 PACKAGING MATERIALS-NON-HALOGENATED BARRIER MATERIALS
- O-11 PHOTOACTIVATION OF CONVENTIONAL CURING REACTIONS

CLP TASK FORCE RESEARCH

- C-1 CLP LITHOGRAPHIC PLATES
- C-2 LOW COST POLYTHIOLS FOR CLP TECHNOLOGY
- C-3 CLP INK FEASIBILITY STUDY
- C-4 ULTRAVIOLET CURABLE INKS
- C-5 LETTERFLEX - ADDITIONAL QUALITY CONTROL STUDIES

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CLP TASK FORCE RESEARCH (continued)

- C-6 CLP MATERIALS TECHNOLOGY
- C-7 CURABLE POLYMERS - DARK STABILITY AND Q-42 EVALUATION
- C-8 CURABLE LIQUID POLYMERS - CLP PRESSURE SENSITIVE ADHESIVES
- C-9 PHOTORESISTS
- C-10 INSTRUMENTATION FOR CLP's

AGRICULTURAL RESEARCH

- A-1 COAL DESULFURIZATION
- A-2 UNIVERSITY SOYBEAN AGRONOMY RESEARCH
- A-3 FORMULATION AND EVALUATION OF MONO-KOTE
- A-4 CALEDONIAN MINING COMPANY
- A-5 VERMICULITE-MOSS PLANTING DEVICES
- A-6 PLUG-MIX FLORIDA EXPERIMENTAL STATION, FT. PIERCE, FLA.
- A-7 BINDING MICRONUTRIENTS WITH CLAY - MR. ERIC KRAUSE, N.Y.

BIOCHEMICAL RESEARCH

- B-1 ADAPTED RUMEN MICROBES
- B-2 RUMINANT GROWTH STIMULANT - COMPOUND 101-6
- B-3 AMMONIUM ISOBUTYRATE AS SILAGE PRESERVATIVE
- B-4 AMMONIUM ISOBUTYRATE AS POULTRY FEED ADDITIVE
- B-5 DIVISIONAL CONSULTATION

OTHER ACTIVITIES

- OT-1 THE GRACE CANE SUGAR PROCESS
- OT-2 CONTRACT OPERATIONS

These items are included in the various editions of the report as shown below:

ACG Edition	A-1 thru A-7; B-1 thru B-5
Consolidated U.S. Edition	All Items
Consolidated Foreign Edition	All Items except I-9

AGRICULTURAL RESEARCHA-1 COAL DESULFURIZATION (Project 4834)

Results of a brief laboratory investigation indicate that the sulfur content in high sulfur coals cannot be removed by treatment with anhydrous ammonia or trichloroethylene (the solvents for sulfur from native ores). No further work is planned.

(Kolbe)

A-2 UNIVERSITY SOYBEAN AGRONOMY RESEARCH (Project 4834)

An agreement has been reached with the Agronomy Department of Iowa State University to conduct soybean agronomy research on the effectiveness of iron and zinc chelates in improving yields. The program will be directed toward determining the effect of these chelates in alkaline soils which past tests have shown are amenable to this treatment. The amount of Grace support has been set at \$9000.

(Legal)

A-3 FORMULATION AND EVALUATION OF MONO-KOTE (Project 2659)

Test panels prepared using MK-4 formulas with addition of sodium borate, No. 74 Sauereisen cement, and fiberglass + sodium borate are currently being fire tested at the United States Gypsum Laboratories. Test results will be correlated with laboratory test data on samples collected during preparation of the panels.

Two new Mono-Kote non-fibrous formulations show considerable improvement in bond strength over MK-3 and MK-4. These were prepared by synthesizing an asbestos chemical composition - no fiber was included with either composition. Essentially, these are cements composed of silica, magnesia, iron, alumina, and calcium. On an average, bonding strength was improved over MK-3 by a factor of 2, and over MK-4 by a factor of 5. The densities of the two new Mono-Kotes, made with the synthetic cements, were higher than MK-3 or MK-4 and this may have been a factor in strength improvement. Further tests will determine this.

(Kraus)

A-4 CALEDONIAN MINING COMPANY (Project 4850)

The Caledonian Mining Company (UK) has made an arrangement with the Southwest Research Institute (SWRI) for worldwide rights to manufacture and market Silica Foam. Silica Foam is used as fireproofing and fire retardant spray coating for mine tunnels, but can also be used for fireproofing steel and wooden structures.