GEORGIA INSTITUTE OF TECHNOLOGY — OFFICE OF CONTRACT ADMINISTRATION

PROJECT ADMINISTRATION DATA SHEET

[x] ORIGINAL [ ] REVISION NO. _____

Project No. A-3150 DATE 2/4/82

Project Director: Dr. Tom Starr School/Lab EMSL/CESB

Sponsor: Kawneer Co., Inc.; Jonesboro, GA 30236

Type Agreement: P. O. No. J37900

Award Period: From 1/27/82 To open (Performance) _____ (Reports)

Sponsor Amount: $500 Contracted through:

Cost Sharing: _____ GTRI

Title: Analysis of $Al(OH)_3$

ADMINISTRATIVE DATA

OCA Contact Linda H. Bowman x4820

1) Sponsor Technical Contact:

2) Sponsor Admin/Contractual Matters:

Mr. Charles Owen
Kawneer Co., Inc.
Box 516
Jonesboro, GA 30236

Defense Priority Rating: None

Security Classification: None

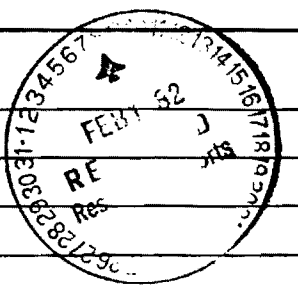
RESTRICTIONS

See Attached N/A Supplemental Information Sheet for Additional Requirements.

Travel: Foreign travel must have prior approval — Contact OCA in each case. Domestic travel requires sponsor approval where total will exceed greater of $500 or 125% of approved proposal budget category.

Equipment: Title vests with N/A

COMMENTS:



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Computer Input
Project File
Other _____

FORM OCA 4:781

GEORGIA INSTITUTE OF TECHNOLOGY OFFICE OF CONTRACT ADMINISTRATION

SPONSORED PROJECT TERMINATION SHEET

Date 5/7/82

Project Title: Analysis of $Al(OH)_3$

Project No: A-3150

Project Director: Dr. Tom Starr

Sponsor: Kawneer Co., Inc.

Effective Termination Date: open - 5/4/82

Clearance of Accounting Charges: _____

Grant/Contract Closeout Actions Remaining:

- [x] Final Invoice and ~~Closing Documents~~
- [ ] Final Fiscal Report
- [ ] Final Report of Inventions
- [ ] Govt. Property Inventory & Related Certificate
- [ ] Classified Material Certificate
- [ ] Other _____

Assigned to: EMSL (School/Laboratory)

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Georgia Institute of Technology
ENGINEERING EXPERIMENT STATION
ATLANTA, GEORGIA 30332

April 21, 1982

Contract No. A-3150

Mr. Charles Owen
Corporate Engineering
Kawneer Company, Inc.
P. O. Box 516
Jonesboro, Georgia 30236

Dear Mr. Owen:

We have completed analysis of the hydrated alumina samples from your caustic etch regeneration process. The attached results indicate a relatively high level of impurities in the material (approximately 5% total); the major elements being magnesium, calcium, silicon, tin and iron.

The most desirable use of this waste product for your operation would seem to be as feedstock for reduction to aluminum metal. Although this material is not pure enough to be used directly, it may be possible to dilute the impurities sufficiently by mixing with your normal feedstock. Your technical people are in a better position to make a judgement on that.

I do suggest that it may be possible to improve the quality of the alumina by modest modification of your regeneration system. According to the process description you left with me, the smut filter has a 10 micron retention. It could be that much of the contamination is passing through this filter in the form of small particles. If so, a more retentive filter between the smut filter and the reactor could improve the purity of the alumina significantly.

If you are interested in pursuing this further, I would suggest that we perform additional tests on the caustic stream to determine the size and composition of any particulate matter entering the reactor. Please call me and we can discuss the details of this testing.

Sincerely,

Thomas L. Starr
Energy and Materials Sciences
Laboratory

Attachments

cc: Reports Coordinator, OCA

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Analysis of Hydrated Alumina from Kawneer Co.

Elemental analysis (x-ray spectroscopy)

Sodium	0.11%
Copper	0.08
Silicon	0.72
Magnesium	1.86
Iron	0.50
Tin	0.70
Calcium	0.94

Phase identification (x-ray diffraction)

α-$Al(OH)_3$ Gibbsite

no other phase detected

Particle size (Scanning electron microscopy)

coarse, well-formed crystalite clusters about 20-30μm in diameter. Note attached photomicrographs.