

March 31, 1964

THOMAS B. BONNEY

MR. THOMAS I. McCLINTOCK

PITTSBURGH

VERNON WORKS

RE: MARINITE

PLAINTIFF'S
EXHIBIT

AL-335

Since you have had similar problems in the past you will probably
be interested in the attached correspondence.

THOMAS B. BONNEY

ES
Attach.

Attachments, enoo

B.R.Speer to G.H.Farraah, Mar.9,1964, Re: Machining Molten Metal Marinite.

G.H.Farraah to B.R.Speer, Mar.17,1964, Re: Machining "Molten Metal" Grade Marinite.

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March 17, 1944

STANLEY E. PARNAS
Industrial Hygiene Laboratory
Alcoa Research Laboratories
New Kensington

MR. E. R. SMITH
Engineering Department
Alcoa Research Laboratories
New Kensington

RE: MACHINING "MOLTON METAL" GRADE MARINITE

As a result of your letter of March 9 on the captioned subject, and a call from Mrs. Egan relating to this problem, we have looked through the literature and, more productively, called the supplier (Johns-Manville Sales Corporation) in Pittsburgh.

According to the supplier, our original information on Marinite, as taken from a trade names catalogue, is incorrect. Marinite, molton metal grade, is a mixture of asbestos fiber and distemperous earth bonded with an epoxy resin. The binder is described as chemically inert, but not inorganic as we were originally lead to believe.

Cured epoxy resins are generally considered to be innocuous although some release irritant dusts or fumes when machined. Workers at Johns-Manville are supplied with respirators of the "nuisance dust" type for use while sawing Marinite and reportedly have no trouble such as you have described. Johns-Manville does advise the use of exhaust ventilation at machines when this material is worked in large quantities.

As a result of our conversation yesterday, it does not appear that installation of exhaust ventilation at every machine in the shop is demanded at this time. Since this is only an occasional operation, I suggest that the following precautions be adopted:

1. Every machine operator, and others who work in the immediate area during the machining of Marinite and who are bothered by the dust, be issued a respirator of the nuisance dust type. (The respirator carried in the store room at stock No. 244-245-246 should be satisfactory.) Those who are to wear them should be instructed in the proper fitting of respirators.

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2. Long-sleeved shirts or jackets should be worn to protect the arms.
3. Use of a suitable barrier cream on the exposed skin should be recommended to those who are most susceptible to irritation. "Fly No. 9 Gel", a product of Milburn Company, is claimed to put a film on the skin which is impervious to epoxies, amines, glass fibers, and most organic solvents. To be effective, a protective cream should be washed off and reapplied to the clean skin several times a day.
4. Your present practice of cleaning up all Marinite dust by use of vacuum type equipment should be continued.

I do not feel that the taking of dust samples will contribute much to solution of the problem at this time, since we have no criterion on which to base an interpretation of the results. The tests we have made on Marinite dust showed only mild alkalinity (pH 10.1) as received, and but slight change (pH 10.7) following ignition at about 1300°F.

If the suggested precautions do not improve the situation during your next episode of machining Marinite, please let me know and a more extensive investigation will be attempted.

GEORGE H. FARRAH

GHF:ES

cc: Library, ARL

Dr.D.A.Fusia and Mrs.Virginia C.Kuhn, ARL
Messrs. E.S.Howarth, S.C.Huddleston, ARL
Dr.L.V.Cralley, Pittsburgh

INTERNAL CORRESPONDENCE March 9, 1964

FROM B. R. SPEER
Engineering Department
Alcoa Research Laboratories
New Kensington

To DR. G. H. FARRAH
Industrial Hygiene Division
Alcoa Research Laboratories
New Kensington

RE: MACHINING MOLTEN METAL MARINITE

Several of the men in the Shop have expressed to the foreman that during the machining of the captioned Marinite they experience some discomfort on account of clogging of the sinus and difficulty in breathing. Also one of them indicated that the Marinite dust irritated the skin on his arms and face.

During the week of March 2, 1964, K. C. Bartholf was machining small Marinite headers in the lathe and it was brought to my attention that he was again having some discomfort, apparently from the dust. I talked to Bartholf and at that time his face seemed dry and red and he indicated that the condition had started almost as soon as he started to work on the Marinite. He said that he had not been to the Medical Department, and I suggested that he have the doctor or the nurses check his face.

Mrs. Kuhn called the office later in the day to say that Bartholf's condition might have been caused by Marinite dust and that she would discuss his condition with Dr. Fusia for his reaction to the problem.

Dr. Fusia called March 6, 1964, and advised us to have the Industrial Hygiene Division run a check while we were machining Marinite to determine if the dust was present in sufficient density and of a nature to constitute a health hazard. He did indicate that the asbestos in the dust might present a health

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To Dr. G. H. Parrish

DATE

March 9, 1968

SHEET NO.

problem and should be checked.

Will you, therefore, please arrange to have your division make this check for us? We will arrange to give you advance notice when we will be machining Marinite on the lathe, as we consider this the most objectionable operation.

If there is additional information needed or if we can help in any way, please let us know.

B. R. Speer
B. R. SPEER

BRS:mjb

cc: Library

Dr. D. A. Fusia and Mrs. Virginia C. Kuhn

Messrs. E. E. Howarth, S. G. Middleton and B. R. Speer

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MARINITE

Boyd Spear / GHF 3/19/68

- ① Several men in shop ^{have} complained to foreman that during machining of captured they "experience some discomfort on acct of clogging of sinus & difficulty in breathing"
- ② One indicated it irritated skin on arms & face
- ③ K.C. Bartholf experiencing some discomfort (in what manner?) from the dust. Face was dry & red.

Any odor to marinite?

Any medical report on Bartholf?

Is irritation due to pH (alkaline) or some other factors?

INTERNAL CORRESPONDENCE May 4, 1964

FROM THOMAS B. BONNEY
PITTSBURGH OFFICE

TO INDUSTRIAL HYGIENE
COMMITTEE CHAIRMEN

J. Marinite

RE. INDUSTRIAL HYGIENE NEWSLETTER
SAWING MARINITE™

*This is Ind. Hyg Newsletter
6A*

In recent months several incidents have occurred that prompted us to take a closer look at the potential problems associated with the sawing of Marinite. In the past, because of erroneous information given us about the composition of this material, we may have advised you poorly about the proper handling of it. In order to correct this, especially in view of the widespread use of Marinite, we felt that this Newsletter would be timely and appropriate.

Marinite is an insulating refractory board manufactured by Johns-Mansville. It consists of a mixture of asbestos fibers and diatomaceous earth bonded with an epoxy resin. In Alcoa it is widely used for headers in DC Casting Units and for trough linings. In order to be used for these applications, it is necessary that the Marinite first be sawed into appropriate sizes and shapes. Sawing generates a considerable amount of dust which is the main, if not the sole, cause of difficulty in handling this material. Were it not for the presence of the epoxy binder, proper control would consist simply of keeping the sawyers' time-weighted exposures below 5 mppcf, the threshold limit value for asbestos. However, the epoxy binder complicates the picture.

Although the surface of a cured epoxy resin system is almost completely inert, this is not true of the interior structure which contains an appreciable amount of unreacted resin and hardener. As a result, dusts from machining and sawing epoxy resin systems are likely to be quite irritating. Dermatitis from

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JEFF
EXHIBIT
ALCOA 18
PENGAD-Bayonne

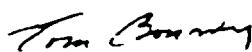
these dusts is quite common. They may also cause asthmatic-like reactions in certain sensitive individuals. (We have already experienced this in our Company.)

Because active components of epoxy resin systems are present in them, dusts from Marinite cannot be treated as mineral dusts. Additional precautions are necessary, and the saw should be equipped with exhaust ventilation. (This is in accord with the recommendations of Johns-Manville.) Probably most of the fabricating plants will require this type of set up. Respiratory protection is no substitute for exhaust ventilation, except at locations where cutting Marinite is an unusual, infrequent, and brief occurrence.

Sawyers should wear long sleeved shirts to protect their arms from the irritant dust. Personal cleanliness is also important and the men should be instructed to wash up following their exposure to Marinite dust.

If any of the recipients have any specific questions or comments concerning Marinite, we will be pleased to hear from them.

The latest of the Hygienic Guides are enclosed: Acrolein, Aluminum, Ethylene Glycol Monoethyl Ether, Manganese, Petroleum Naphtha, Pyridine, Tetraethyl Lead, Allyl Alcohol, Allyl Chloride, Cyclohexane, Ethyl Chloride, and Triorthocresylphosphate.


Thomas B. Bonney

TBB/mje
Enclosures

cc/encl: Company physicians
G. H. Farrah, J. M. Plunkett, ARL
F. H. Illig, Pgh.
M. O. Colwell, L. V. Cralley, file

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