



Mine Safety Appliances Co.

BRADDOCK, THOMAS AND MEADE STREETS

Pittsburgh, Pa.

July 23, 1946.

IN REPLY PLEASE
REFER TO

M.S.A. Research Lab.
327 Craft Avenue
Pittsburgh (13), Pa.

Dr. Robert A. Kehoe
Kettering Laboratory of Applied Physiology
College of Medicine - Eden Avenue
University of Cincinnati
Cincinnati (19), Ohio

Dear Dr. Kehoe:

Replying to your letter of July 2, 1946 in which you inquire regarding suitable respiratory protection from lead fume. The GMA-1 type of canister that you mention in your letter will not be satisfactory for lead fume. This is a canister filled with activated charcoal and contains only a cotton filter, the efficiency of which is too low for lead fume. For fume of the metallic type, such as lead, we recommend the M.S.A. "Comfo" Metal Fume Respirator (B. M. Approval No. 2139). This is approved by the Bureau of Mines for lead fume and all other fumes that are no more toxic than lead. You understand, of course, that this is merely a mechanical filter device and will give no protection from toxic or discomforting gases around smelters, such as sulfur dioxide from roasting sulfide ores or HCN if a cyanide process is used. The M.S.A. Air Line Respirator (B. M. Approval No. 1909) may also be used for metallic fumes if the hose line is not an encumbrance.

You did not indicate directly what type of a smelter you are dealing with; also, whether it is the primary metal recovery process or the secondary in which scrap would be used. However, I am assuming that since this is an interest of the Ethyl Gasoline Corporation, you might be dealing with a primary lead smelter.

In the past we have had a variety of lead fume problems. One of these was the exposure that attended the making of leaded steel. One of the procedures was to throw lead shot into the ingot mold immediately after the mold had been filled with molten steel. There were also some fluxes and other chemicals used in this process with the result that they needed both fume and gas protection. This was not realized by the industry until they had put the process into large scale operation with the result that we had a rather hurried call for some sort of emergency protection. In response we quickly made a small canister that combined fume and gas protection and have supplied these in limited quantities. We have not tooled up to make them in large quantities owing to the fact that at the time the need occurred, the Bureau of Mines did not have a schedule for such

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a combination respirator and, of course, we did not know what we would have to meet. Such a schedule now exists and I may tell you confidentially that we are conducting some development work but it may not be completed for six months. This same type of canister has been procured by the steel construction and demolition industry where it becomes necessary to burn out rivets or cut with gas flames structural members that have been heavily coated with lead paint. It happens that in addition to the lead smoke there are gases and vapors of an odorous nature that nauseate workmen.

I was pleased to hear from you and to have the opportunity of giving you this information. If there is anything additional that I can assist with, I will be pleased to give any help that I can.

Sincerely yours,



William P. Yant

Director of Research and Development

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