

Biological specimens can give information of value in detecting exposure to other materials: namely, a number of heavy metals and several organics, including some of the common solvents. A few of the solvents, such as methanol, ethanol, and carbon disulfide, are found unchanged in blood and urine, while a number of materials produce significant quantities of characteristic metabolites. These measurable quantities can be found in the biological fluids in advance of permanent injury to the employees. The industrial hygiene department can then go into action to locate and control the source of the exposure.

Safety and industrial hygiene services in the plant will inevitably overlap, and co-operation between the two is mutually beneficial. Four eyes see more than two, and the safety engineer frequently can call the hygienist's attention to conditions that he observes in his plant visits. No industrial hygiene survey is complete without a record of safety conditions observed in the course of the work, to be referred to the safety department for its consideration. Each department should be fully informed about the work of the other by exchange of reports and records. This exchange of reports also helps to promote a better understanding among persons working in these closely related fields of endeavor. Where this is not done there is too often a rivalry between these departments as to jurisdiction over certain phases of the work.

Where the industrial hygiene service is a division of the medical department the personnel records pertinent to the work of this service are readily available. Where this is not the case or when special work, such as the control of a silica exposure, is being conducted, the personnel department can furnish the information on new employees essential for the interpretation of the results. At times a new employee may show silicotic nodulation in his chest x-ray, for example, that can be explained only by the personnel record of his previous employment history.

Compensation claim records are another key to industrial hygiene control; to be of greatest value they should be current and complete. Pertinent data

¹ F. A. Patty, *Incl. Med. and Surg.*, 18, 368 (1940).

[illegible]

Obtain Accurate Information on Employee's Occupation and Classify Correctly.

1. In collecting blood specimens every effort should be made to avoid contamination. It is not essential that the donor disrobe; however, caution should be exercised to see that the site of the puncture is free of lead.
2. Instructions in the proper use of vacutainer tubes and needles are attached hereto.
3. The needles provided have been sterilized prior to shipment.
4. Ten cubic centimeters or more of whole blood are desired for analysis. The capacity of the tube is approximately 20 cubic centimeters.
5. Coagulated blood does not interfere with the analysis, and it is preferred that no anti-coagulant be added to the specimen.
6. After collection of specimen rinse the needle thoroughly, replace wire, and return unsterilized with blood specimen.
7. Attached hereto are copies of a form which, when completed, will give essential information regarding the occupation of the donor. The information provided in the column headed "Occupation" will be of value in correlating blood-lead determinations with specific operations. It is requested that the completed form be returned with the specimen.

In the past there has been a lack of uniformity in the wording used for describing the occupation of the donor. In order to have a uniform nomenclature, we have listed the more typical occupations with a description of the work performed. Your cooperation in using these classifications will be appreciated.

Works with Solder as:

- Solderer—Prepares base metal for solder by application of flux and tinning metal or applies solder to tinned surface.
- File—Removes solder by using file. *Does not* use power tools.
- Booth grinder—Works in solder grind booth. Uses power tools on solder.
- Repairman—Uses file, disc or grinding wheel on solder. May apply solder before removing excess. Also repairs steel surfaces.
- Other, such as grinder (similar to booth grinder except power tools are used on solder outside the booth), new hire, solder reclaim, booth cleaners, drip mold welders, blow-out, supervision, regrits wheels, etc.

Works on Steel Only as:

- Metal finisher or grinder—Finishes steel surface only and does not remove solder.
- Assembler—This includes door hangers, door fitters, and other similar operations.
- Other, such as clean and grind booth, stock handlers, supervision, etc.

8. The specimens and needles should be returned to the laboratory.

Figure 6. Specimen data sheet.