

REGULATIONS CONCERNING THE USE OF TETRAETHYL LEAD
IN THE SEMI-PLANT

by

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and

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I. The supply of tetraethyl lead shall be kept under lock in a ventilated steel box. This box shall be kept outdoors, at least twenty feet from any other building. The key will be kept by R. Wiley and will be given only to R. C. Reinhardt and Max Collamer. Other persons will be required to get permission from Dr. Irish to obtain tetraethyl lead, either from this supply box or from the laboratory or semi-plant. The wooden box should be elevated on a shelf or bracket so as not to sit in contact with the pan which constitutes the floor of the hood.

II. Storage for Immediate Use

Upon removal from the supply box, the tetraethyl lead shall be kept locked in a box inside a hood; both box and hood shall be marked with a danger sign and a notice to wear rubber gloves when working inside. The hood shall have a positive in-draft of air at all points in its front when completely open. The hood shall be kept shut when not in use and the blower on at all times.

III. Handling Tetraethyl Lead

A. General Precautions

Clean rubber gloves and a clean rubber apron shall be worn at all times when handling tetraethyl lead. A supply of new rubber gloves and aprons shall be kept in the stockroom, available to men handling tetraethyl lead at all times. Soft, torn, or soiled gloves shall not be used. Gloves and apron shall be washed with kerosene inside and out, followed by soap and water inside and out, before and after handling tetraethyl lead.

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B. Handling in Semi-Plant

1. Only the head day operator shall be permitted to open the box in which the tetraethyl lead is kept or to carry out the following procedure:

2. Fill the iron catalyst container with the desired quantity of tetraethyl lead some time before it is required and inspect carefully after each filling to make sure that no leak is occurring through the valves and that no dripping has occurred on the outside surface of the container. If repairs are required the entire container and valves must be washed carefully and repeatedly with kerosene before dismantling. Otherwise the apparatus should be burned before discarding.

3. Place tetraethyl lead can, glass funnel, and graduated cylinder in a white enameled pan. Fill the cylinder to the desired level (in no case amounting to more than 0.5% by weight of the total reactor charge nor more than 135 grams). Cap the tetraethyl lead can and replace in box. Place enameled pan under the iron catalyst container from the reactor (see drawing and specifications), open top valve, insert funnel, and pour in tetraethyl lead from cylinder. Remove funnel from container, being careful to avoid drippings from funnel coming into contact with the outside of the container, and place in the enameled pan with the graduated cylinder. Wash inside of pan and contents with bromine- CCl_4 solution, then with kerosene; dry, and replace on shelf.

4. Only the operator in charge of each shift will be permitted to handle the catalyst container according to the following procedure:

5. Wear clean, impregnated leather gloves and rubber apron, remove tetraethyl lead container from stand in hood, and attach to reactor. Open bottom valve and all valves between bottom and reactor and leave open until end of run to permit thorough removal of lead from container by the reflux.

6. Return gloves to a receptacle in which they should be kept at all times when not in use. Keep gloves clean and discard when worn or when contaminated with tetraethyl lead.

7. Regulations concerning procedures following the reaction will be written after results of the projected study of flow of lead in the process is completed.

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