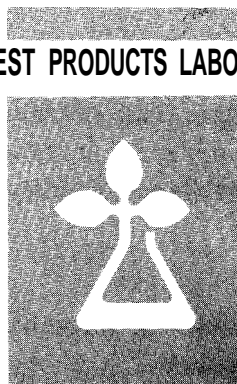


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RESEARCH NOTE

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SAWDUST FLOOR-SWEEPING COMPOUNDS¹

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Sawdust is commonly used as the absorptive material in floor sweeping compounds, a large variety of which are produced in considerable volume by manufacturers throughout the United States. These compounds are made chiefly by small concerns seeking an outlet for sawdust or other mill residue as a sideline to their principal activity, but a number of small businesses specialize in their production. The manufacture of sweeping compound is not a large-volume outlet for sawdust in a given locality, although total production, for which statistics are not available, must bulk large for the country as a whole.

In addition to sawdust or some similar absorbent fibrous material, sweeping compounds usually contain oils or waxes, of varying kinds, or water-wax emulsions. Other materials sometimes found in sawdust compounds are salt, sand, a coloring material, and a perfuming agent.

There are two general types of sweeping compounds containing sawdust. One kind, containing oil, is for use on cement, terrazzo, wood, and other floors not affected by mineral oil. In the other the oil is replaced by a water-wax emulsion to make it suitable for use on linoleum, rubber, asphalt, tile, and mastic floors likely to be affected by oil.

¹This Note is a slight revision of a report by the same title, originally issued in 1947 as Forest Products Laboratory Report 1666-14.

Sawdust used in sweeping compounds is not commonly designated as to species, type, or size. The stock is usually of the finer grades, however, and of uniform size. The material is usually at least well air dried in order to absorb the oil or wax ingredients readily. Sand, when used, is clean, fine, and sharp, or of feldspar stock.

The type of oil used in sweeping compounds varies with the character of the product. Some formulas call for heavy refined mineral oil; others for a medium grade of mineral oil with a high boiling point (cylinder oil). Low-priced compounds employ low-grade lubricating oils. Paraffin oil is a common constituent of sweeping compounds.

Some formulas list paraffin wax as an ingredient, which is melted in small quantities in the hot paraffin oil. The wax is intended to improve the dust-gathering properties of the sawdust and oil.

Sweeping compounds are usually colored with low-cost dyes, such as vermilion, bluing, and Fuller's earth. Other dyeing agents include iron oxide, alazarin, oil green, azo oil red dyes, and such water-soluble dyes as malachite green and crocein scarlet. The amount of dye required properly to color the mixture depends on the ingredients, and in most cases is very small.

Cedar oil, oil of sassafras, oil of mirbane, and similar substances are sometimes added for fragrance.

Formulas of commercial sweeping compounds are similar as to principal ingredients, but vary as to proportions and specially featured items, such as color, fragrance, and character of product.

The following are some formulas for sweeping compounds:

Formula A

Dry pine (16 mesh) millwork sawdust, and hot paraffin oil to which a small amount of paraffin wax has been added. The amount of oil required is determined by the "feel" during mixing. The product is light lemon in color. Red and green dry dyes are often added.

Formula B

<u>Ingredients</u>	<u>Quantity</u>
Sawdust	15 pounds
Paraffin oil	1/2 pint
Powdered wax	1 ounce
Common salt	1/2 pound
Fine sharp sand	5 pounds
Oil mirbane	1/2 ounce

Melt the wax and add it to the warm paraffin oil. Add the oil of mirbane and any aniline color desired. Stir and saturate the sawdust. When thoroughly saturated, add the salt and sand and enough sawdust to give the finished product the desired dampness.

Formula C (Dry compound)

<u>Ingredients</u>	<u>Quantity</u>
Paraffin wax	1 pound
28°B. paraffin oil	8 gallons
Hardwood sawdust	128 pounds
Dry sand	192 pounds
Common salt	8 pounds
Oil of sassafras	1 pint

Formula D (Wet compound)

Wet compound is composed of the same ingredients used in Formula C, except for the wax and the scent. However, considerably more oil is used to make the compound quite oily and moist. The mixture readily attracts and holds excessive dust and dirt. Obviously it is intended for use under very dirty conditions.

Formula E

<u>Ingredients</u>	<u>Parts by weight</u>
Fine sawdust	3-1/2
Fine sand	10
Common salt	1-1/2
Paraffin oil	1

Little equipment is needed in the production of floor sweeping compounds. The principal piece of machinery is a revolving tank, similar to a concrete mixer, in which all mixing is done and from which the product is discharged directly into containers. The tank is revolved by a suitable motor. Other equipment required is a tank or steel barrel for heating the oil and screens for screening sand and sawdust.

The product is discharged directly into steel or wood barrels and kegs. A standard barrel holds 200 pounds of compound composed of sawdust and oil; or 350 pounds when the usual amount of sand is added. Containers smaller than barrels include 15-pound, 25-pound, and 100-pound metal or wood kegs and pails.