

FLUKE®

Biomedical

Nuclear Associates 37-07X Series

Superflab Plastic Bolus Material

Users Manual

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Section 1

General Information

1.1 Introduction

A search for a tissue-equivalent bolus substance that is flexible and will not dry out has led to the development of Superflab*, a new plastic bolus. This material is a synthetic oil gel having a specific gravity of 1.02. It is based on vinyl plastic containing a large amount of di-isodecyl phthalate, and it includes only materials approved by the FDA for human contact.

Superflab comes in different thicknesses, which provide maximum dose build-up for relevant photon energies. This material is elastic and quite “flabby” – hence the Superflab name. It conforms nicely to the patient’s contour while still maintaining a good uniformity of thickness.

The dosimetric properties of Superflab were determined by comparison with polystyrene of various thicknesses, using both photon and electron beams of various energies. Subsequently it was found to be a closer simulation of water than polystyrene.

Since this vinyl gel has electron build-up characteristics and a density closer to water than does polystyrene, (long accepted as standard) it is widely used in radiotherapy clinics as a bolus material. It is not tissue equivalent at diagnostic x-ray energies.

1.2 Specifications

Model No.	Size
37-070	0.3 x 30 x 30 cm
37-071	0.5 x 30 x 30 cm
37-072	1.0 x 30 x 30 cm
37-073	1.5 x 30 x 30 cm
37-074	2.0 x 30 x 30 cm
37-075	2.5 x 30 x 30 cm
37-076	3.0 x 30 x 30 cm
37-078	4.0 x 30 x 30 cm

Each Superflab is shipped with one piece of Masonite®, 30 cm x 30 cm x 6 mm.

* Developed by Gene R. Feaster, Ph. D., Department of Radiation Therapy, University of Kansas Medical Center.

1.3 Instructions

Superflab may be used in direct patient contact or may be wrapped in plastic before placing on patient. Plastic films such as Saran Wrap®, Reynolds 904® (a PVC film) and Glad Wrap® have been used with success. It may be desirable to occasionally wash the Superflab with soap and water when direct patient contact is used. After washing, an application of talcum powder will restore the original surface condition.

Because Superflab is an oil gel, it is saturated with a synthetic oil which can “corrode” plastic surfaces, particularly vinyl surfaces such as those used in modern “wood-finish” cabinetry and shelving. Ordinary formica-type counter tops are unaffected. Paper in contact with Superflab will become stained with the synthetic oil.

Although Superflab exhibits minimum cold flow, it is best to store it flat rather than folded. Storage should be on a flat surface such as wood, Masonite, glass, metal or Formica®. Storage on acrylic is acceptable, but there is a slight attack of the acrylic surface. Since Superflab does not suffer inelastic strain for normal stresses, it does not have to be bagged or wrapped in plastic film to maintain its shape while being stored.

Cutting Superflab is best done with a paper cutter. Writing on the material is possible with a number of different pens; if the ink is oil-soluble, it will slowly diffuse into the gel and the writing may become obscure.

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