62110 Canada Balsam

(from "Pitman's Common Commodities and Industries, GUMS & RESINS – by Ernest J. Parry, London; Printed by Sir Isaac Pitman & Sons, Ltd, Bath, England, v-(1465E))

Canada balsam, or Canada turpentine, is the oleoresinous exudation of the balsam fir, a coniferous tree indigenous to the United States and Canada. The oleoresin, which consists of a resinous substance dissolved in an essential oil, is secreted in schizogenous vessels in the bark, and collects in small cavities, which eventually become blisters. These are punctured and the oleoresin collected.

Canada balsam forms a viscid yellow liquid, frequently showing a distinct green fluorescence. It has a pleasant, turpentiny odour and a bitter acrid taste. On keeping, the essential oil gradually evaporates and the resin dries to a hard, transparent varnish.

This oleoresin is used to a certain extent in medicine, and is a constituent of flexible collodion, and is a great service in the mounting of microscopic specimens. In the last-named purpose it is dissolved in an equal volume of xylene. Such a solution forms a non-crystallising mounting medium, having a refractive index approximating to that of ordinary glass, and therefore involving the minimum dispersion of light. A genuine Canada balsam has the following properties:

Specific gravity:	0.985	to	0.995
Optical rotation:	+1°	to	4°
Refractive index:	1.5180	to	1.5210
Acid value:	84	to	87
Ester value:	5	to	10

On distillation, Canada balsam yields from 15 to 25 per cent. of essential oil which boils at about 160°, is laevo-rotarory, and consists almost entirely of terpenes. Canada balsam oil does not differ materially in composition or properties from ordinary turpentine oil.

The commonest adulterant of Canada balsam is, as above mentioned, either colophony or crude turpentine. The best method of detecting colophony is to drive off the essential oil by prolonged heating on a water bath, leaving the dry resin to be examined. In the case of pure Canada balsam, this dry resin will be found to have an acid value of about 120 to 125, whilst colophony has an acid value of about 165, so that an acid value of over 130 is a very strong indication of the presence added colophony or crude turpentine. The presence of these adulterants can, according to E. Dietrich, be confirmed by the Storch-Morawski reaction, but, in the author's opinion, this is not correct and cannot be relied on.

There is a product sometimes to be found on the market under the name of Oregon balsam, which is not a natural product at all, but is a mixture of common rosin and turpentine, closely resembling Canada balsam in appearance, and which is used to adulterate it frequently. There is also a true Oregon balsam, which is the oleoresinous exudation from the trunk of Pseudotsuga mucronata. This balsam yields a considerable quantity of an essential oil, which can be characterised by its consisting very largely of laevopinene. The factitious Oregon balsam of the above description contains the same proportion of solid resin as does pure Canada balsam and the physical characters of the two substances are as nearly as possible the same. Detection of such adulteration is however possible, by separating the essential oil and the resin and examining each separately.

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Information according to following literature:
Heinz A. Hoppe, “Taschenbuch der Drogenkunde”:
16 – 27 % proportion essential oil
70 – 80 % proportion resin

Handbook by Hager:
Approx. 24 % proportion essential oil
Approx. 76 % proportion resin

Product Specification

Product:	Canada Balsam, natural
Product No.:	62110
Appearance:	light yellowish, transparent, highly viscous
Odor:	characteristic, like conifers
Specific weight:	0.9821 (20°C)
Refractive Index:	1.520 (20°C)
Solubility in	
Ether:	1:1
Toluene:	1:1
Chloroform:	1:1
Flash point:	43°C

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