Polyethylene

CAS: [9002-88-4]

DESCRIPTION

A white, translucent, partially crystalline and partially amorphous resin produced by the direct polymerization of ethylene at high temperatures and high pressure. Various grades and types, differing from one another in molecular weight, molecular weight distribution, degree of chain branching, and extent of crystallinity, are available. It is insoluble in water.

Functional Use in Foods Masticatory substance in chewing gum base.

REQUIREMENTS

Identification Prepare the sample by dissolving it in hot toluene and evaporating on a potassium bromide plate. The infrared absorption spectrum of the sample exhibits maxima at the same wavelengths as the typical spectrum, as shown in the section on *Infrared Spectra (Series C: Other Substances)*.
Heavy Metals (as Pb) Not more than 0.002%.
Lead Not more than 3 mg/kg.
Molecular Weight Between 2000 and 21,000.
Volatiles Not more than 0.5%.

TESTS

Heavy Metals Prepare and test a 1-g sample as directed in *Method II* under the *Heavy Metals Test*, Appendix IIIB, using 20 μg of lead ion (Pb) in the control (*Solution A*).
Lead Prepare a *Sample Solution* as directed in the general method under *Chewing Gum Base*, Appendix IV. This solution meets the requirements of the *Lead Limit Test*, Appendix IIIB, using 10 μg of lead ion (Pb) in the control.
Molecular Weight Determine as directed in the general method, Appendix IV.
Volatiles (**Caution**: To reduce explosion hazard, pass carbon dioxide or nitrogen into the lower part of the drying oven at a rate of about 100 mL/min.) Dry a 4-g sample for 45 min at 105° as directed under *Loss on Drying*, Appendix IIC.

Packaging and Storage Store in well-closed containers.