

Japan Customs Analysis Methods

No. 406

Determination of the weight ratio of monomer units in ethylene copolymers by Nuclear Magnetic Resonance Spectroscopy

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1. Scope

This analysis method is applied for the determination of the weight ratio of monomer units in the following ethylene copolymers: ethylene-propylene copolymers, ethylene-1-butene copolymers, ethylene-1-hexene copolymers and ethylene-1-octene copolymers.

2. Procedure

The measurements for the kinds of samples above shall be carried out by means of Carbon-13 Nuclear Magnetic Resonance Spectroscopy. For detailed information about the analytical procedures, refer to “Standard Test Method for Determination of Linear Low Density Polyethylene (LLDPE) Composition by Carbon-13 Nuclear Magnetic Resonance” (ASTM D5017-96, Reapproved 2009).^(*)

If the specifications, e.g. magnetic field strength, of the NMR instrument used cause difficulty in satisfying the condition in 9.8 under “9. Instrument Parameters” of the ASTM method concerned, provided that the instrument fulfils the other conditions, it is exempt from the condition in 9.8.

(Note) Conversion from molar ratio to weight ratio is needed.