



# Standard Practice for Rubber and Rubber Latices—Nomenclature<sup>1</sup>

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*This standard has been approved for use by agencies of the Department of Defense.*

## INTRODUCTION

The system of designating rubbers and rubber latices in this practice was developed in 1955 to replace designations GR-A, GR-I, GR-M, GR-S and GR-T (standing for “Government Rubber”: A-acrylonitrile, I-isobutylene, S-styrene, M-monochlorobutadiene and T-thiosulfide), used for synthetic rubbers made in government owned plants. The system was designed to be a generic classification of the rubber polymers that would accommodate both existing and future rubbers. The chemical composition of the polymer chain was selected as the best classification proposal to achieve this goal. The rubber polymers were divided into eight classes as described in Section 3 of this practice. The letter symbol for the class was given last in the designation for the rubber. Preceding the class symbol were letter symbols to designate either the monomers used to prepare the polymer or the substituent groups on the polymer chain. The system has been successful both in accommodating the many new polymers developed since 1955 and in conveying to the user certain characteristics of the rubber associated with the chemical composition.

## 1. Scope

1.1 This practice covers a system of general classification for the basic rubbers both in dry and latex forms determined from the chemical composition of the polymer chain.

1.2 The purpose of this practice is to provide a standardization of terms for use in industry, commerce, and government and is not intended to conflict with but rather to act as a supplement to existing trade names and trademarks.

1.3 In technical papers or presentations the name of the polymer should be used if possible. The symbols can follow the chemical name for use in later references.

NOTE 1—For terms related to thermoplastic elastomers, see Practice D 5538.

## 2. Referenced Documents

2.1 *ASTM Standards:*<sup>2</sup>

D 5538 Practice for Thermoplastic Elastomers—Terminology and Abbreviations

<sup>1</sup> This practice is under the jurisdiction of ASTM Committee D11 on Rubber and is the direct responsibility of Subcommittee D11.08 on Terminology.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard’s Document Summary page on the ASTM website.

## 3. Rubbers

3.1 Rubbers in both dry and latex form shall be classified and coded from the chemical composition of the polymer chain in the following manner:

M—Rubbers having a saturated chain of the polymethylene type.

N—Rubbers having nitrogen, but not oxygen or phosphorus, in the polymer chain.

O—Rubbers having oxygen in the polymer chain.

R—Rubbers having an unsaturated carbon chain, for example, natural rubber and synthetic rubbers derived at least partly from diolefins.

Q—Rubbers having silicon and oxygen in the polymer chain.

T—Rubbers having sulfur in the polymer chain.

U—Rubbers having carbon, oxygen, and nitrogen in the polymer chain.

Z—Rubbers having phosphorus and nitrogen in the polymer chain.

## 4. Class Designations

4.1 The “M” class includes rubbers having a saturated chain of the polymethylene type. The following classification shall be used:

ACM—Copolymers of ethyl or other acrylate and a small amount of monomer which facilitates vulcanization.