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A brief guide to polymerization terminology (IUPAC Technical Report)

Christine K. Luscombe, *et al.*
Pure and Applied Chemistry, 2022
Vol. 94, no. 9, pp. 1079-1084
https://doi.org/10.1515/pac-2021-0115

The use of self-consistent terminology to describe polymerizations is important for litigation, patents, research and education. Imprecision in these areas can be both costly and confusing. To address this situation, IUPAC has made recommendations, which are summarized in this technical report. In the version shown as the supplementary material, references and hyperlinks lead to source documents; screen tips contain definitions published in IUPAC recommendations. More details can also be found in the IUPAC Purple Book. This guide is one of a series on terminology and nomenclature. Refer to the supplementary material for the complete and interactive version of this brief guide. This 2-page version is reprint at the end of this issue.

https://iupac.org/project/2015-013-1-400/

IUGS–IUPAC recommendations and status reports on the half-lives of ^{87}Rb, ^{146}Sm, ^{147}Sm, ^{234}U, ^{235}U, and ^{238}U (IUPAC Technical Report)

Igor M. Villa, *et al.*
Pure and Applied Chemistry, 2022
Vol. 94, no. 9, pp. 1085-1092
https://doi.org/10.1515/pac-2021-1202

The Task Group "Isotopes in Geosciences" (TGIG) was jointly established by IUPAC and the International Union of Geological Sciences (IUGS) to recommend consensus half-life values for the long-lived radioactive nuclides that are used in geochronology. So far, it has evaluated the published measurement results for the decay constant and half-life of ^{87}Rb, ^{146}Sm, ^{147}Sm, ^{234}U, ^{235}U, and ^{238}U. The detailed argumentations of each evaluation, and an extensive reference list, are presented by Villa *et al.* in three manuscripts published in *Geochem. Cosmochim. Acta* in 2015, 2106, and 2022, and widely disseminated in the geochemical and cosmochemical community. The present Technical Report is a summary, explaining the procedures applied in the evaluations.

https://iupac.org/project/2012-036-2-200/

Terminology for chain polymerization (IUPAC Recommendations 2021)

Christopher M. Fellows, *et al.*
Pure and Applied Chemistry, 2022
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Chain polymerizations are defined as chain reactions where the propagation steps occur by reaction between monomer(s) and active site(s) on the polymer chains with regeneration of the active site(s) at each step. Many forms of chain polymerization can be distinguished according to the mechanism of the propagation step (*e.g.*, cyclopolymerization—when rings are formed, condensative chain polymerization – when propagation is a condensation reaction, group-transfer polymerization, polyinsertion, ring-opening polymerization—when rings are opened), whether they involve a termination step or not (*e.g.*, living polymerization—when termination is absent, reversible-deactivation polymerization), whether a transfer step is involved (*e.g.*, degenerative-transfer polymerization), and the type of chain carrier or active site (*e.g.*, radical, ion, electrophile, nucleophile, coordination complex). The objective of this document is to provide a language for describing chain polymerizations that is both readily understandable and self-consistent, and which covers recent developments in this rapidly evolving field.

https://iupac.org/project/2010-007-1-400/

Pesticide soil microbial toxicity: setting the scene for a new pesticide risk assessment for soil microorganisms (IUPAC Technical Report)

Dimitrios G. Karpouzas, Zisis Vryzas, and Fabrice Martin-Laurent
Pure and Applied Chemistry, 2022
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https://doi.org/10.1515/pac-2022-0201

Pesticides constitute an integral part of modern agriculture. However, there are still concerns about their effects on non-target organisms. To address this the European Commission has imposed a stringent regulatory scheme for new pesticide compounds. Assessment of the aquatic toxicity of pesticides is based on a range of advanced tests. This does not apply to terrestrial ecosystems, where the toxicity of pesticides on soil microorganisms, is based on an