

# RUTHENIUM-CATALYZED SELECTIVE OXIDATION OF POLYETHYLENES

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## PATENT STATUS

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European Patent Office	Published Application	4142934	03/08/2023	2020-099
Patent Cooperation Treaty	Published Application	WO 2021/222634	11/04/2021	2020-099

Additional Patent Pending

## BRIEF DESCRIPTION

Polyolefins currently constitute approximately half of all synthetic plastics produced worldwide. Despite their low cost and excellent thermal and mechanical properties, polyolefins generally do not mix well with other materials, and this lack of compatibility limits their use in high-performance composites and as components of more sustainable plastics. This invention incorporates low levels of polar functional groups into polyolefins which is a promising strategy to overcome this shortcoming.

## SUGGESTED USES

Polyolefins are quintessential commodity plastics of immense commercial importance but the lack of functionality can limit their use in many advanced applications. The C-H functionalization is a promising strategy for incorporating functionalities into polymers of ethylene and linear alpha-olefins.

## ADVANTAGES

The polymers of ethylene and other linear alpha-olefins overcome the problems of branched alpha-alkenes that are less reactive due to steric effects which also undergo side reactions, such as chain scission that lead to polymer degradation.

## RELATED MATERIALS

## ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- ▶ [Dehydrogenation And Isomerizing Ethenolysis Of Polyethylene](#)

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## INVENTORS

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## OTHER INFORMATION

### KEYWORDS

ethylene

### CATEGORIZED AS

- » [Materials & Chemicals](#)
- » [Chemicals](#)
- » [Polymers](#)

### RELATED CASES

2020-099-0