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(54) **CRYSTALLINE FORMS OF A BRUTON'S TYROSINE KINASE INHIBITOR**

(71) Applicant: **Pharmacyclics LLC**, Sunnyvale, CA (US)

(72) Inventors: **Norbert Purro**, Los Gatos, CA (US); **Mark Stephen Smyth**, Foster City, CA (US); **Erick Goldman**, Concord, CA (US); **David D. Wirth**, Oak Ridge, NC (US)

(73) Assignee: **Pharmacyclics LLC**, Sunnyvale, CA (US)

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Primary Examiner — Raymond Henley, III
(74) *Attorney, Agent, or Firm* — Foley Hoag LLP

(57) **ABSTRACT**

Described herein is the Bruton's tyrosine kinase (Btk) inhibitor 1-((R)-3-(4-amino-3-(4-phenoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)piperidin-1-yl)prop-2-en-1-one, including crystalline forms, solvates and pharmaceutically acceptable salts thereof. Also disclosed are pharmaceutical compositions that include the Btk inhibitor, as well as methods of using the Btk inhibitor, alone or in combination with other therapeutic agents, for the treatment of autoimmune diseases or conditions, heteroimmune diseases or conditions, cancer, including lymphoma, and inflammatory diseases or conditions.

13 Claims, 16 Drawing Sheets