

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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AFTON CHEMICAL CORPORATION,  
Petitioner,

v.

INFINEUM INTERNATIONAL LIMITED,  
Patent Owner.

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Case IPR2017-01321  
Patent 8,076,274 B2

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Before JON B. TORNQUIST, JEFFREY W. ABRAHAM,  
and MICHELLE N. ANKENBRAND, *Administrative Patent Judges*.

TORNQUIST, *Administrative Patent Judge*.

DECISION  
Institution of *Inter Partes* Review  
37 C.F.R. § 42.108

## I. INTRODUCTION

Afton Chemical Corporation (“Petitioner”) filed a Petition (Paper 1, “Pet.”) requesting *inter partes* review of claims 1–13 of U.S. Patent No. 8,076,274 B2 (Ex. 1001, “the ’274 patent”). Infineum International Limited (“Patent Owner”) filed a Preliminary Response to the Petition (Paper 6, “Prelim. Resp.”).

We have authority to determine whether to institute an *inter partes* review. 35 U.S.C. § 314; 37 C.F.R. § 42.4(a). The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted “unless the Director determines . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.”

After considering the Petition and the Preliminary Response, we determine that Petitioner has demonstrated a reasonable likelihood of prevailing with respect to challenged claims 1–13 of the ’274 patent. Accordingly, we institute *inter partes* review with respect to those claims.

### A. *Related Proceedings*

Petitioner notes that a European Patent Application to which the ’274 patent claims priority is the subject of a “Third Party Observation under Article 115 EPC.” Pet. 1. The parties identify no other related proceedings. *Id.*; Paper 4, 1.

### B. *The ’274 Patent*

The ’274 patent discloses a lubricating oil composition for use in diesel engines. Ex. 1001, 1:6–8. The ’274 patent explains that combustion of fuel in diesel engines “leads to the formation of acidic moieties which can have detrimental effects,” such as increased corrosion of engine parts. *Id.* at

3:16–19. In order to neutralize these acidic moieties, lubricating oils for diesel engines “are usually formulated to have relatively high basicity (e.g. high total base number, TBN),” which “is usually attained by incorporating basic metal-containing detergents in the lubricating oils.” *Id.* at 3:19–25. The amount of basic metal detergent that can be used is limited, however, “because the metal of the detergent gives rise to ash materials which adversely affect the operation of engine equipment such as exhaust gas filters and exhaust gas purification catalysts.” *Id.* at 3:31–35. Magnesium-containing detergents also “tend to cause bore polishing,” i.e., the wearing of lubricant-containing grooves in the bore wall, which limits the ability of the grooves to retain lubricant and potentially leads to increased wear and engine failure. *Id.* at 1:33–42, 3:43–48.

According to the '274 patent, the applicants discovered that by selecting an appropriate set of additives, a lubricating oil “containing relatively high concentrations of magnesium from magnesium-containing detergents can be formulated without giving rise to unacceptable levels of bore polishing or unacceptable levels of ash in diesel engines.” *Id.* at 3:51–55. This lubricating oil has the following components: (a) a lubricating oil basestock of lubricating viscosity; (b) an antioxidant component that “is selected from one or more ash-free aminic and/or sulfur-free phenolic compounds in an amount of at least 0.6 mass % and up to 3.0 mass % based on the total mass of the lubricating composition”; (c) a detergent component that “is an overbased magnesium compound having a total base number (TBN) exceeding 350 mg/g KOH”; and optionally (d) one or more metal hydrocarbyl dithiophosphate compounds in an amount of from 0.0 to 1.8 mass %. *Id.* at 4:1–22.

*C. Illustrative Claims*

Claims 1 and 13 are illustrative of the challenged claims and are reproduced below:

1. A lubricating oil composition for a diesel engine, comprising the following components:

- (a) a lubricating oil basestock of lubricating viscosity;
- (b) an antioxidant component;
- (c) a detergent component; and

optionally (d) one or more metal hydrocarbyl dithiophosphate compounds in an amount of from 0.0 to 1.8 mass % and/or (e) a calcium detergent compound;

wherein the antioxidant component (b) is selected from one or more ash-free aminic and/or sulfur-free phenolic compounds in an amount of at least 0.6 mass % up to 3.0 mass % based on the total mass of the composition; and

the detergent component (c) is an overbased magnesium compound having a total base number (TBN) exceeding 350 mg/g KOH selected from one or more magnesium sulfonates, magnesium salicylates, and magnesium phenates and which provide the composition with greater than 0.05 mass % Mg based on the total mass of the composition, and wherein the sulfated ash content of the composition is at least 0.6 mass % to not more than 2.0 mass % as determined by ASTM D874.

Ex. 1001, 9:20–10:3.

13. The composition of claim 1 wherein the detergent component (c) comprises salicylate detergent.

*Id.* at 10:34–35.

*D. The Asserted Grounds of Unpatentability*

Petitioner contends claims 1–13 of the '274 patent are unpatentable based on the following grounds (Pet. 18):<sup>1</sup>

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<sup>1</sup> Petitioner also relies on a declaration from Dr. William Y. Lam (Ex. 1004).

Reference(s)	Basis	Claims Challenged
Colclough <sup>2</sup>	§ 102	1–11
Nicholson <sup>3</sup> and ACEA 2004 <sup>4</sup>	§ 103	1–12
Fetterman <sup>5</sup> and Arrowsmith <sup>6</sup>	§ 103	1–12
Colclough and Arrowsmith	§ 103	13
Nicholson, ACEA 2004, and Arrowsmith	§ 103	13

Petitioner contends that each recited reference is prior art to the '274 patent under 35 U.S.C. § 102(b). Pet. 17–18. Patent Owner does not dispute, at this stage of the proceeding, the prior art status of the recited references.

## II. ANALYSIS

### A. Claim Construction

In an *inter partes* review, “[a] claim in an unexpired patent shall be given its broadest reasonable construction in light of the specification of the patent in which it appears.” 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs.*,

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<sup>2</sup> EP Patent Publication No. 0 280 579 A2, published Aug. 31, 1988 (Ex. 1007).

<sup>3</sup> EP Patent Publication No. 0 663 436 A1, published July 19, 1995 (Ex. 1009).

<sup>4</sup> *ACEA European Oil Sequences, Service Fill Oils for Gasoline Engines, Light Duty Diesel Engines, Engines with After Treatment Devices & Heavy Duty Diesel Engines*, EUR. AUTOMOBILE MANUFACTURERS ASS’N (2004) (Ex. 1012).

<sup>5</sup> EP Patent Publication No. 0 311 318 A1, published Apr. 12, 1989 (Ex. 1010).

<sup>6</sup> U.S. Patent Publication No. 2004/0127371 A1, published July 1, 2004 (Ex. 1020).

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