

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

UMICORE AG & CO. KG,

Petitioner

Patent No. 8,404,203

Issue Date: March 16, 2013

Title: PROCESS FOR REDUCING NITROGEN OXIDES USING COPPER
CHA ZEOLITE CATALYSTS

**PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 8,404,203
PURSUANT TO 35 U.S.C. § 312 and 37 C.F.R. § 42.104**

Case No. IPR2015-01123

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LISTING OF EXHIBITS

- Exhibit 1001 U.S. Patent No. 8,404,203 to Bull et al.
- Exhibit 1002 U.S. Patent No. 4,046,888 to Maeshima et al.
- Exhibit 1003 U.S. Patent No. 4,503,023 to Breck, deceased et al.
- Exhibit 1004 U.S. Patent No. 6,709,644 to Zones et al.
- Exhibit 1005 U.S. Patent Application Publication No. US 2006/0039843 to Patchett et al.
- Exhibit 1006 U.S. Patent Application Publication No. US 2005/0031514 to Patchett et al.
- Exhibit 1007 Dedecek et al., "Siting of the Cu⁺ Ions in Dehydrated Ion Exchanged Synthetic and Natural Chabasites: a Cu⁺ Photoluminescence Study" Microporous and Mesoporous Materials, Vol. 32, pp. 63-74 (1999).
- Exhibit 1008 Expert Declaration of Johannes A. Lercher, Ph.D
- Exhibit 1009 Excerpts from File History of U.S. Patent No. 8,404,203 to Bull et al., and Reexamination No. 95/001,453
- Exhibit 1010 U.S. Patent No. 4,961,917 to Byrne
- Exhibit 1011 U.S. Patent No. 5,516,497 to Speronello et al.
- Exhibit 1012 Ishihara et al., "Copper Ion-Exchanged SAPO-34 as a Thermostable Catalyst for Selective Reduction of NO with C₃H₆," 169 Journal of Catalysis 93-102 (1997)
- Exhibit 1013 U.S. Patent No. 4,297,328 to Ritscher et al.
- Exhibit 1014 Chung, S.Y. et al., "Effect of Si/Al Ratio of Mordenite and ZSM-5 Type Zeolite Catalysts on Hydrothermal Stability for NO Reduction by Hydrocarbons," Studies in Surface Science and Catalysis, vol. 130, pp. 1511-1516 at 1513 (2000)
- Exhibit 1015 Declaration of Dr. Frank-Walter Schütze
- Exhibit 1016 U.S. Patent No. 4,544,538 to Zones

Pursuant to 35 U.S.C. §§ 311-319 and 37 C.F.R. § 42, real party-in-interest Umicore AG & Co. KG (“Umicore” or “Petitioner”) respectfully requests *inter partes* review (“IPR”) of claims 1-31 of U.S. 8,404,203 (“the ’203 patent”) to Ivor Bull et al., which was filed June 8, 2009 and issued March 26, 2013. According to U.S. Patent and Trademark Office (“US PTO”) assignment records, the ’203 patent is currently assigned to BASF Corporation (“Patent Owner”). There is a reasonable likelihood that Petitioner will prevail with respect to at least one claim challenged in this Petition.

I. Mandatory Notices (37 C.F.R. § 42.8)

A. Real Party-in-Interest (37 C.F.R. § 42.8(b)(1))

Petitioner, Umicore, along with parent Umicore S.A. (also referred to as “Umicore NV”) and its wholly owned subsidiaries Umicore USA Inc., Umicore Autocat Canada Corp., and Umicore Autocat USA Inc. are the real parties-in-interest.

B. Related Matters (37 C.F.R. § 42.8(b)(2))

Petitioner is not aware of any existing related matters. Petitioner is concurrently filing IPR Petition No. IPR2015-01124, which also relates to the ’203 patent. This petition focuses on a primary prior art reference that discloses aluminosilicate CHA zeolite catalysts that are specifically intended for use in internal combustion engines, and have a silica to alumina mole ratio within the claimed range. The secondary reference discloses and provides a motivation to modify those catalysts by adding copper, resulting in a copper to aluminum atomic ratio within the claimed range. The -1124 petition focuses on the reverse: There, the primary prior art

references disclose aluminosilicate CHA catalysts with copper to aluminum atomic ratios within the claimed range, and secondary references that disclose and provide the motivation to modify the primary reference catalysts to use silica to alumina mole ratios within the claimed range.

C. Counsel (37 C.F.R. § 42.8(b)(3))

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II. Payment of Fees Incurred in Connection with this Petition (37 C.F.R. § 42.103)

The US PTO is authorized to charge the filing fee and any other fees incurred by Petitioner to the deposit account of Kenyon & Kenyon LLP: 11-0600.

III. Requirements for IPR (37 C.F.R. § 42.104)

A. Grounds for Standing (37 C.F.R. § 42.104(a))

Petitioner certifies that the '203 patent (Exhibit 1001) is available for IPR and that Petitioner is not barred or estopped from requesting an IPR challenging the patent's claims on the grounds identified in this petition.

B. Identification of Challenge (37 C.F.R. § 42.104(b)(1)-(3)) and Relief Requested (37 C.F.R. § 42.22(a)(1))

Petitioner requests *inter partes* review of and challenges claims 1-31 of the '203

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