

## **Intellectual Property Department**

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## **Sintered Neodymium-Iron-Boron Permanent Magnet List of Licensees (as of April 2003)**

In alphabetic order:

- Advanced Technology & Materials Co., Ltd.(China)  
(Note: A license to High Mag Technology Corp. has been assigned  
to Advanced Technology & Materials Co., Ltd.)
- Beijing Jingci Magnetism Technology Co.(China)
- Beijing Tsinghua Innovation Technology Development Co., Ltd.(China), which  
changed  
its name to THINOVA Co.,Ltd. on August 20, 2003
- Dowa Mining Co., Ltd.(Japan)
- Hitachi Magnetics Corp.(U.S.A.)
- Hitachi Metals, Ltd.(Japan)
- Magnequench, Inc.(U.S.A.)
- Magnetfabrik Schramberg GmbH (Germany)
- N.V. Philips' Gloeilampenfabrieken(Netherland)
- Neorem Magnets Oy(Finland)
- San Huan New Material High-Tech Inc.(China), sold by Beijing San Huan International  
Trading Co.(China)
- Shin-Etsu Chemical Co., Ltd.(Japan)
- TDK Corp.(Japan)
- The Morgan Crucible Company Plc.(U.K.), manufactured by Morganite Crumax  
Inc.(U.S.A.)
- Vacuumschmelze GmbH(Germany)
- Yunsheng(Group)Co., Ltd.(China)

## Expiration Dates of the Basic Patents held by NEOMAX and Magnequench

NEOMAX holds a number of patents on Nd-Fe-B magnets and magnetic materials. Although some NEOMAX patents relating to sintered Nd-Fe-B magnets and magnetic materials will begin to expire in 2003, other NEOMAX patents relating to Nd-Fe-B magnets will not expire until 2014.

The following table shows the expiration dates for the major composition patents presently held by NEOMAX and Magnequench.

(Year)

	Major Composition Patent	Japan	USA	Europe
NEOMAX	Basic RE-Fe-B Composition	2003	2003*	2003
	RE-Fe, Co-B Composition	2008	2003*	2007
	Nd, Dy-Fe, Co-B Composition	2003	2010	2003
	RE-Fe-B Compound	2003	2014**	-
	RE-Fe, Co-B Compound	2003	2014**	-
Magnequench	Basic RE-Fe-B Composition	2003	2006	2004
	Including Co	2004	2012	-

\* Covers Nd-Fe(,Co)-B anisotropic magnets and magnetic materials.

\*\* USP 5,645,651 covers a RE-Fe, Co-B compound having a tetragonal crystal structure. Its term extends to July 8, 2014. The validity and enforceability of this patent were verified in the US ITC proceeding in which NEOMAX and Magnequench jointly obtained an exclusion order prohibiting the importation into the United States of products covered by six of their respective patents, including USP 5,645,651. This patent applies not only to Co-containing compounds but also to compounds not including Co and/or compounds with additives such as Dy.