TURKEY AS THE GLOBAL LEADER IN BORON EXPORT & PRODUCTION
ETİ MINE

- **Date of Establishment**: 1935
  - 1935 -1998 ETİBANK
  - 1998 -2004 ETİ Holding A.Ş.
  - 2004 -.....  Eti Mine Works

- **Main Field of Activity**: The production and sales of boron products.

- **Legal Status**: State owned company

- **Management Systems**:
  - Environmental Management System TS-ISO-EN-14000
  - Occupational Health & Safety Management System TS-İSG-OHSAS 18001
  - General requirements for competence of test and calibration laboratories TS-EN ISO/IEC 17025
Following four minerals comprise around 90% of commercially use.

- Colemanite
- Tincal
- Ulexite
- Kernite

Colemanite and tincal are the most widely-used boron minerals.

Turkey is the world’s major source of colemanite.
World Boron Minerals Reserves

- **USA**: 6%
- **PERU**: 2%
- **BOLIVIA**: 2%
- **CHILE**: 3%
- **ARGENTINA**: 1%
- **RUSSIA**: 8%
- **KAZAKHSTAN**: 1%
- **CHINA**: 4%
- **TURKEY**: 73%
WORLD BORON SECTOR (2012)

Consumption
• 3.9 million tons

Production Capacity
• 4.9 million tons

Production
• 4.1 million tons
World Boron Consumption by End-Use in 2012

- Glass: 51.0%
- Ceramics: 13.0%
- Agriculture: 14.0%
- Detergents: 3.0%
- Others: 19.0%
World Boron Market Shares, 2012

- Russia
- China
- South America

- Eti Mine 47%
- Rio Tinto 23%
- Others 30%
MISSION

• To utilize the national boron resources within the framework of sustainable development, and to serve these goods to all humanity by converting them into high quality value added boron products, thus to contribute to the nation’s prosperity.

VISION

• To become an establishment which continues steady growth in traditional boron products market and takes a pioneering role in developing new boron products that make difference, and creates maximum added value from boron resources by making the country information and technology base of the world boron industry.
# Boron Minerals Reserve of Eti Mine

<table>
<thead>
<tr>
<th>BASIN NAME</th>
<th>AMOUNT (Tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EMET</strong> (Colemanite)</td>
<td>1,818,264,009</td>
</tr>
<tr>
<td><strong>KIRKA</strong> (Tincal)</td>
<td>838,152,732</td>
</tr>
<tr>
<td><strong>BİGADİÇ</strong> (Colemanite-Ulexite)</td>
<td>636,287,478</td>
</tr>
<tr>
<td><strong>KESTELEK</strong> (Colemanite)</td>
<td>5,420,009</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>3,298,124,228</td>
</tr>
</tbody>
</table>
Production Sites of Eti Mine
Boron Products of Eti Mine

**BANDIRMA BORON WORKS**
- Borax Decahydrate
- Borax Pentahydrate
- Boric Acid
- Boron Oxide
- Etidot-67 (Agri Boron)
- Sodium Perborate

**EMET BORON WORKS**
- Boric Acid
- Concentrated Colemanite

**KIRKA BORON WORKS**
- Etibor-48 (Borax Pentahydrate)
- Etibor-68 (Anhydrous borax)
- Calcined Tincal (Compacted)

**BİGADİŞ BORON WORKS**
- Ground Colemanite / Ulexite
- Concentrated Colemanite / Tincal / Ulexite
- Natural Zeolite
Eti Mine in Figures; Production & Capacity of Boron Products

Thousand Tons

Production
Capacity


435 420 436 518 715 923 1.021 1.102 1.312 1.002 1.400 1.780 1.788 1.800

570 730 923 1.100 1.272 1.277 1.365 1.725 2.125 2.131


0 300 600 900 1.200 1.500 1.800 2.100 2.400
Eti Mine in Figures; Sales

Million USD $

- Domestic Sales
- Export
- Total Sales

<table>
<thead>
<tr>
<th>Year</th>
<th>Domestic Sales</th>
<th>Export</th>
<th>Total Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>18</td>
<td>233</td>
<td>251</td>
</tr>
<tr>
<td>2001</td>
<td>16</td>
<td>215</td>
<td>231</td>
</tr>
<tr>
<td>2002</td>
<td>15</td>
<td>209</td>
<td>224</td>
</tr>
<tr>
<td>2003</td>
<td>21</td>
<td>201</td>
<td>222</td>
</tr>
<tr>
<td>2004</td>
<td>24</td>
<td>228</td>
<td>252</td>
</tr>
<tr>
<td>2005</td>
<td>27</td>
<td>276</td>
<td>303</td>
</tr>
<tr>
<td>2006</td>
<td>32</td>
<td>322</td>
<td>354</td>
</tr>
<tr>
<td>2007</td>
<td>39</td>
<td>390</td>
<td>429</td>
</tr>
<tr>
<td>2008</td>
<td>40</td>
<td>399</td>
<td>439</td>
</tr>
<tr>
<td>2009</td>
<td>51</td>
<td>535</td>
<td>586</td>
</tr>
<tr>
<td>2010</td>
<td>44</td>
<td>452</td>
<td>506</td>
</tr>
<tr>
<td>2011</td>
<td>62</td>
<td>647</td>
<td>710</td>
</tr>
<tr>
<td>2012</td>
<td>79</td>
<td>854</td>
<td>933</td>
</tr>
</tbody>
</table>
Regional Export of Eti Mine

Asia: 58.5%
Europe: 27.1%
America: 12.5%
Middle East: 1.6%
Africa: 0.3%
Consumption of Boron Products in the World & Change in Eti Mine’s Market Share

Consumption of Boron Products in the World (Million Tonnes)

- **2000**: 3.1
- **2002**: 2.7
- **2005**: 3.3 (World Boron Leader)
- **2010**: 4.0
- **2012**: 3.9

Change in Eti Mine’s Market Share

- **2000**: 31%
- **2002**: 30%
- **2005**: 36% (World Boron Leader)
- **2010**: 42%
- **2012**: 47%
Eti Mine is stated as 15\textsuperscript{th} in export rank in the list of “Top 1000 Exporters of Turkey”
R & D Works

**Strategy:** Rather than waiting the growth of boron market, leading to develop market by finding new boron products and new usages.

**Aim:**
- Increase production efficiency
- Develop new usage areas
- Develop new products
- Contribute boron technology
R & D Works

Completed projects

- Sodium Perborate Monohydrate
- Trimethyl Borate
- Agri-Bor & Zinc Borate
- Boron Oxide
- Calcined Tincal
- Anhydrous Borax

Ongoing projects

- Sodium Borohydride
- Calcined Colemanite
- Boron Soda
Targets of Strategic Plan

- PRODUCTION CAPACITY OF BORON CHEMICALS
  2.1 MILLION TONS

Long Term Targets

- PRODUCTION CAPACITY OF BORON CHEMICALS
  5.5 MILLION TONS
• Eti Maden is open to cooperate with local or foreign technology firms to develop innovative boron products.

• As a reliable and the leading supply source of boron, Eti Maden encourages the local and foreign private investors to invest in those boron using industries in our country.
Our Marketing Representatives & Agencies
MISSION

• Mission is to utilize national boron resources within the framework of sustainable development, and to serve all humanity by converting them into high value added boron products, thus contributing to the nation’s prosperity.

VISION

• To create a qualified work force with a spirit of unity, mindful to his duties, putting innovative efforts at front, protecting and upgrading institutional image and with strong motivation.
## Human Resources*

<table>
<thead>
<tr>
<th>UNIT</th>
<th>CIVIL SERVANT</th>
<th>CONTRACT EMPLOYEE</th>
<th>TOTAL</th>
<th>LABOR</th>
<th>PERSON WITH DISABILITIES</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>CENTRE</td>
<td>210</td>
<td>537</td>
<td>747</td>
<td>29</td>
<td>2</td>
<td>778</td>
</tr>
<tr>
<td>PROVINCE</td>
<td>69</td>
<td>702</td>
<td>771</td>
<td>2.302</td>
<td>83</td>
<td>3.166</td>
</tr>
<tr>
<td>GRAND TOTAL</td>
<td>279</td>
<td>1.239</td>
<td>1.518</td>
<td>2.331</td>
<td>85</td>
<td>3.944</td>
</tr>
</tbody>
</table>

* August 31st 2013

For more information: [www.etimaden.gov.tr](http://www.etimaden.gov.tr)
ETİ MADEN İŞLETMELERİ GENEL MÜDÜRLÜĞÜ
KIRKA BOR İŞLETME MÜDÜRLÜĞÜ

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THANKS

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