2. GENERAL DESCRIPTION OF THE ZEOLITES

2.1 Grouping of Zeolites

1. Natrolite group
   (Zeolites with 4=1 building units)
   - 1.1.1 Natrolite
   - 1.1.2 Mesolite
   - 1.1.3 Scolecite
   - 1.1.4 Gonnardite
   - 1.2.1 Edingtonite
   - 1.3.1 Thomsonite
   - 2.1.1 Analcime
   - 1.1.3 Scolecite

2. Analcime group
   - 2.1.1 Analcime
   - 2.2.1 Laumontite
   - 2.3.1 Roggianite
   - 2.4.1 Yugawaralite
   - 2.5.1 Partheite*

3. Zeolites with double connected four rings
   - 3.1.1 Gismondine
   - 3.2.1 Phillipsite
   - 3.3.1 Merlinite
   - 3.4.1 Mazzeite
   - 3.5.1 Paulingite
   - 4.1.1 Gmelinite
   - 4.2.1 Chabazite
   - 4.3.1 Levyne
   - 4.4.1 Erionite
   - 4.5.1 Offretite
   - 4.6.1 Faujasite
   - 4.7.1 Goosecreekite
   - 5.1.1 Mordenite
   - 5.2.1 Dachiardite
   - 5.3.1 Epistilbite
   - 5.4.1 Ferrierite
   - 5.5.1 Bikitaite

4. Zeolites with six ring building units
   - 6.1.1 Heulandite
   - 6.2.1 Stilbite
   - 6.3.1 Brewsterite
   - 6.1.2 Clinoptilolite
   - 6.2.2 Stellerite
   - 6.2.3 Barrerite

5. Zeolites with Mordenite framework (5-1 building units)
   - 5.1.1 Mordenite
   - 5.2.1 Dachiardite
   - 5.3.1 Epistilbite
   - 5.4.1 Ferrierite
   - 5.5.1 Bikitaite

6. Zeolites with Heulandite frameworks (4-4=1 building units)
   - 6.1.1 Heulandite
   - 6.2.1 Stilbite
   - 6.3.1 Brewsterite

7. Zeolites with unknown structure types
   - 7.1.1 Cowlesite

* not synthesized

Natural zeolites as described by Gottardi and Galli

H. Ghobarkar et al., *The Reconstruction of Natural Zeolites*
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Natural zeolites described by Gottardi and Galli\textsuperscript{1} are grouped in first line according to the old mineralogical morphological-structural system which has now been fully adapted to the secondary building unit (SBU)\textsuperscript{5} classification. The SBUs are build up by spokes which symbolize the connection between the centers of two (Si,Al)\textsubscript{O}\textsubscript{4} tetrahedrons. An integral number of SBUs is present in a unit cell, but in some cases a given zeolite framework type can be represented by more than one SBU type. The concept is used in order to clarify the complex framework topology of these types of tecto- silicates to which alumino-silicate zeolites belong. They are only theoretical topological building units and should not be considered to be or equated with species that may be in the solution/gel during the crystallization of a zeolitic material\textsuperscript{5}. The majority of todays known zeolites (natural and synthetic) can be grouped according to the following eighteen SBU types of figure 2.1.

![Figure 2.1: The secondary building units and their symbols (reproduced in parts from ATLAS OF ZEOLITE FRAMEWORK TYPES \textsuperscript{5}, with kind permission).](image-url)