

accurately at a scale of 1 Å = 1cm, they are interchangeable with the HGS protein nucleic acid molecular model and the HGS spacefilling molecular model.

The covalent bond radius of silicon is originally 1.17 Å and BIO-0892 is correct but in case of the zeolite, if the van der Waals radius of adjacent oxygen is designed to have them contact each other, a distance between silicon and oxygen will be about 1.71 Å and when the oxygen covalent bond radius of 0.66 Å is subtracted, it will become 1.05 Å.

The mark "f2m2" is used to denote "female 2 points and male 2 points". The parts are available in 2 colors; yellow and blue. Use the yellow part for silicon and the blue one (BIO-0892) for aluminium and others.

### 1-2 BIO-0893 Silicon, Tetrahedral, f2m2

This part has been designed on the basis of the covalent bond radius original to silicon. Use this part if it is hard to assemble a model using atomic balls. (which are described later,) because they have contact with one another or



when the covalent bond length original to silicon is needed. This part is supplied as a supplementary part and is not contained in the parts-kit.

### 1-3 BIO-1691 Oxygen 144, f1m1

This part has the oxygen bond angle  $144^{\circ} 44'$  and is used as an oxygen component of the zeolite, rock crystal and other silicates.

In the case of the zeolite, as bond angles of oxygen are not uniform, a soft product using

