

CHEM 208**Lab 3: Appreciation of Point Groups**

Goal: To introduce crystallographic point group symmetry and nomenclature.

The purpose of this lab is to serve as a brief refresher to point group symmetry, as well as an introduction to the crystallographic notation for symmetry. From Chem 203 or 204A you may be familiar with Schoenflies notation (e.g., i , C_{2v} , D_{2h}); crystallographers, for historical reasons, use the Hermann-Mauguin notation (e.g., $\bar{1}$, $mm2$, $2/mmm$). The International Tables for Crystallography, for example, exclusively use the Hermann-Mauguin notation.

Since most of you are familiar with Schoenflies notation (any inorganic or group theory text can provide a 15 minute reminder), one of the goals of this lab is for you to teach yourself how to “translate” that notation into crystallographic Hermann-Mauguin notation. A series of simple geometric objects will be given to the group, and you will decide on their symmetry. Are there different opinions between group members? There is no necessary right or wrong answer, so work to understand differences of opinion.

You should assign the point group in both Schoenflies and Hermann-Mauguin notation. Helpful in this quest may be (and likely in that order of importance) group discussion, stereographic projections, and the International Tables for Crystallography (Vol. A).

Report: There is no report to be handed in for this exercise.