Reference

2014 Hofmeister, A.M., Goldsand, J., Whittington, A.G., and Criss, R.G. Effects of chemical composition and temperature on transport properties of silica-rich glasses and melts. *American Mineralogist* **99**, 564-577.

**See Glasses Database File in metadata folder for complete list of Glass samples/compositions and references.**

**Data collected at Washington University, St. Louis, MO**

**Supported by NSF: EAR-1321857**

Files

Table 1 – Sample Descriptions

Table 2 – Chemical Compositions & Hydroxyl Contents

Table 5 – Thermal Diffusivity Values & Fitting Parameters (Calibrated Temperatures)

Table 6 – High Temperature Thermal Diffusivity Values (Calibrated Temperatures)

PRN Files for Both:

Figure 1 – Infrared Spectra OH Stretch

Column 1: Wave number (cm-1)

Column 2: Absorption Coefficient (mm-1)

Figure 2a – Infrared Spectra

Column 1: Wave number (cm-1)

Column 2: Absorption Coefficient (mm-1)

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| **IR Spectra File Name** | **Sample Thickness (mm)** | **Description** | **Sample ID** |
| VASE629 | 5 | vase, 180 scans, res = 2 | Vase |
| BG3813 | 2.792 | brown barn glass, 500 scans, res = 4 | 1890 |
| BG1813 | 2.317 | greenish barn glass, 500 scans, res= 4 | 1890 |
| CHURG623 | 2.592 | church glass, st johns, 500 scans, res = 2 | 1884 |
| INDO1230 | 0.643 | apt, screen indochin, 500 scans, res = 2 | Indochinite |
| INDOC711 | 1.566 | med apt, 1 screen, indochite, 1060 scans, res = 2 | Indochinite |
| INDOQ207 | 1.566 | apt, indochite, 2818 scans, res = 4 | Indochinite |
| INDOV130 | 1.566 | apt, indochite, polished, 2500 scans, res = 4 | Indochinite |
| MOLDA711 | 1.959 | med apt, 1 screen, moldavite, 1592 scans, res = 2 | Moldavite |
| MOLDQ207 | 1.959 | apt, moldavite, 3000 scans, res = 4 | Moldavite |
| MOLDV130 | 1.959 | apt, moldavite, polished, 2500 scans, res = 4 | Moldavite |
| HP26X626 | 4.57 | apt, hp26, 1500 scans, res = 2 | Hapologranite |
| HAPLO803 | 0.86 | near medium apt, ab heated 1400c, 1132 scans, res = 2 | Hapologranite |
| HAPLO724 | 0.534 | near medium apt, haplogranite, 2000 scans, res = 2 | Hapologranite |
| HAPLP724 | 0.8 | near medium apt, haplo 1R, 2000 scans, res = 2 | Hapologranite |
| HAPLQ724 | 0.675 | near medium apt, haplo, 2000 scans, res = 2 | Hapologranite |
| BLUE609 | 2.705 | apt, 500 scans, res = 2 | 1895 |
| BLUE802 | 3.5 | apt near vis, 1000 scans, res = 4 | 1895 |
| ADRIANF1 | 3.5 | apt near vis, 1000 scans, res = 4 | 1895 |
| LEUCO711 | 9 | 200 scans, res = 2 | Leucogranite |
| LEUCG802 | 9 | CaF Window, 500 scans, res = 4 | Leucogranite |
| LEUCO809 | 1.07 | near medium apt, 2000 scans, res = 2 | Leucogranite |
| LEUCO810 | 0.97 | near medium apt, high T, 1540 scans, res = 2 | Leucogranite |
| LEUCO811 | 0.945 | near med apt, medium T, 1290 scans, res = 2 | Leucogranite |
| LEUCO812 | 0.93 | near medium apt, fresh, 2000 scans, res = 2 | Leucogranite |
| LEUCO223 | 1.89 | apt, near vis, remelt, 364 scans, res = 2 | Leucogranite |
| LEUCOGL | 1.883 | 500 scans, res = 2 | Leucogranite |
| CIRC807 | 2.42 | circle glass, 1000 scans, res = 2 | 1926 |
| CIRCG618 | 0.688 | circle glass post LFA, 500 scans, res = 2 | 1926 |
| CG3F813 | 2.374 | circle glass 3 fresh, 500 scans, res = 4 | 1926 |
| CG3C813 | 0.892 | circle glass 3 cooked, 500 scans. Res = 4 | 1926 |
| CIRCLE814 | 0.985 | apt, circle #3, bubbles after 2nd heat, 250 scans, res = 4 | 1926 |
| CIRCLE823 | 2.3 | apt heated circle glass, 300 scans, res = 2 | 1926 |
| CIRCLE829 | 1.4 | circle heated thrice, 200 scans, res = 2 | 1926 |
| CIRCLE830 | 3.11 | circle glass after 2nd heat, 250 scans, res = 2 | 1926 |
| CIRCL906 | 0.83 | apt near, circle glass #4 post lfa, 250 scans, res = 2 | 1926 |
| INSR728 | 5.355 | Na insulator, 1000 scans, res = 2 | 1960 |
| RNAG618 | 0.886 | R glass NA-1960 post LFA, 349 scans, res = 2 | 1960 |
| GROUND01 | 1.51 | ground glass, 500 scans, res = 2 | Modern |
| ANCR929C | 4.2 | apt, 1000 scans, res = 2 | Al-Rhyolite |
| ANCAR2B | 0.395 | apt before, 1000 scans, res = 2 | Al-Rhyolite |
| ANCAR1B | 0.473 | apt before, 1000 scans, res = 2 | Al-Rhyolite |
| ANCR530 | 2.19 | apt remelt, 500 scans, res = 2 | Al-Rhyolite |

Figure 2b – UV Spectra – Excel Files

Column 1: Wavenumber (cm-1)

Column 2: Absorption Coefficient (mm-1)

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| --- | --- | --- |
| **UV Spectra File Name** | **Sample Thickness (mm)** | **Description** |
| BLUE2A | 0.1 | 1895, blue insulator glass |
| NA19601A | 0.787-0.917 | 1960, colorless antique insulator |
| HAPLO1A | 0.521 | Haplogranite |
| LEUCO9A | 1.98 | Leucogranite |
| ANCRRM1A | 2.19 | Al-rhyolite |
| MOLD616A | 0.433 | Moldavite |
| INDO615A | 0.638 | Indochinite |
| CIRCL1A | 2.405 | 1926, Circle glass |
| CIRCLE823 | 3.11 | 1926, Circle glass |
| GROUND1A | 1.5 | Modern ground glass |
| GRNDG2A | 1.505 | Modern ground glass |

Raw Probe Data

|  |  |
| --- | --- |
| **Sample Type** | **Filename** |
| Barn glass/1890 | Hofmesiter samples 10-27-2010 |
| Circle/1926 | Hofmesiter samples 10-27-2010; Hofmeister 8-21-09 Samples |
| Blue/1895, Church/1884, Leucogranite, Vase | Hofmeister silicates 7-22-10 |
| 1960 & Rhyolite | Hofmeister 11-11-08 Samples |
| Haplogranite, Moldavite, & Indochinite | Hofmeister 4-20-07 |