

Dataset: The viscosity effect of TiO₂ on soda-lime-silicate bearing glass

SND-ID: 2021-211-1. **Version:** 1. **DOI:** <https://doi.org/10.5878/0gv4-dr76>

Download data

Ti11.txt (932 bytes)

Ti22.txt (932 bytes)

Ti23.txt (932 bytes)

Ti24.txt (933 bytes)

Ti25.txt (932 bytes)

Ti26.txt (933 bytes)

Ti27.txt (933 bytes)

Ti33.txt (933 bytes)

Ti34.txt (932 bytes)

Ti35.txt (848 bytes)

Ti37.txt (804 bytes)

Visc_parameter_determination_Angell_Rao.m (7.5 KB)

Associated documentation

Dataset readme.pdf (134.68 KB)

Download all files

2021-211-1-1.zip (~151.99 KB)

Citation

Karlsson, S. (2021) Dataset: The viscosity effect of TiO₂ on soda-lime-silicate bearing glass (Version 1) [Data set]. RISE Research Institutes of Sweden. Available at: <https://doi.org/10.5878/0gv4-dr76>

Creator/Principal investigator(s)

[Stefan Karlsson](#) - RISE Research Institutes of Sweden

Research principal

[RISE Research Institutes of Sweden](#) - RISE Glass

Principal's reference number

P105190

Description

As TiO₂ is replacing SiO₂ it has a slight suppressing effect on the viscosity until the limit when Na₂O/TiO₂ ratio is less than 2, indicating a transformation of the structure of TiO₂, a remarkable increase in the fragility and viscosity is observed for the calculated low temperature region. The change is not as evident for the high-temperature region. CaO replaced by TiO₂ gives almost no effect on the viscosity, however, as it approaches Na₂O/TiO₂ ≈ 2 it tends to crystallize at temperatures

of 1000-1050 °C.

Data contains personal data

No

Language

[English](#)

Time period(s) investigated

2019-01-01 - 2019-10-01

Data format / data structure

[Numeric](#)

Responsible department/unit

RISE Glass

Funding

- Funding agency: FORMAS
- Funding agency's reference number: 2018-00707
- Project name on the application: Tunnare och starkare glas för hållbar produktion och konsumtion

Research area

[Geophysics](#) (Standard för svensk indelning av forskningsämnen 2011)

[Geochemistry](#) (Standard för svensk indelning av forskningsämnen 2011)

[Materials engineering](#) (Standard för svensk indelning av forskningsämnen 2011)

[Mineral and mine engineering](#) (Standard för svensk indelning av forskningsämnen 2011)

[Geoscientific information](#) (INSPIRE topic categories)

Keywords

[Thermal properties](#), [Glass](#), [Melting](#), [Thermodynamics](#), [Viscosity](#), [Geology](#)

Publications

Karlsson, S. (2019). The viscosity effect of TiO₂ on soda-lime-silicate bearing glass. 4th International Workshop on Glass and Entropy and 9th International Otto Schott Colloquium.

<http://urn.kb.se/resolve?urn=urn:nbn:se:ri:diva-39908>

URN: <urn:nbn:se:ri:diva-39908>

Accessibility level

Access to data through SND

Data are freely accessible

Use of data

[Things to consider when using data shared through SND](#)

License

[CC BY 4.0](#)

Versions

Version 1. 2021-07-09

Homepage

<https://www.ri.se/sv/vad-vi-gor/projekt/tunnare-och-starkare-glas-for-hallbar-produktion-och-konsumtion>

Download metadata

[DataCite](#)

[DDI 2.5](#)

[DDI 3.3](#)

[DCAT-AP-SE 2.0](#)

[JSON-LD](#)

[PDF](#)

[Citation \(CSL\)](#)

[File overview \(CSV\)](#)

Published: 2021-07-09