

Heart of Glass- Δ 6

Lab 5a-Color Wheel

Heart of Glass

Original
070922-1

Neph Sy	39.82
Whiting	14.16
Zinc Oxide	12.39
EPK	8.94
Flint	22.71
Bentonite	1.98
Copper Carbonate	0.99
Water	75



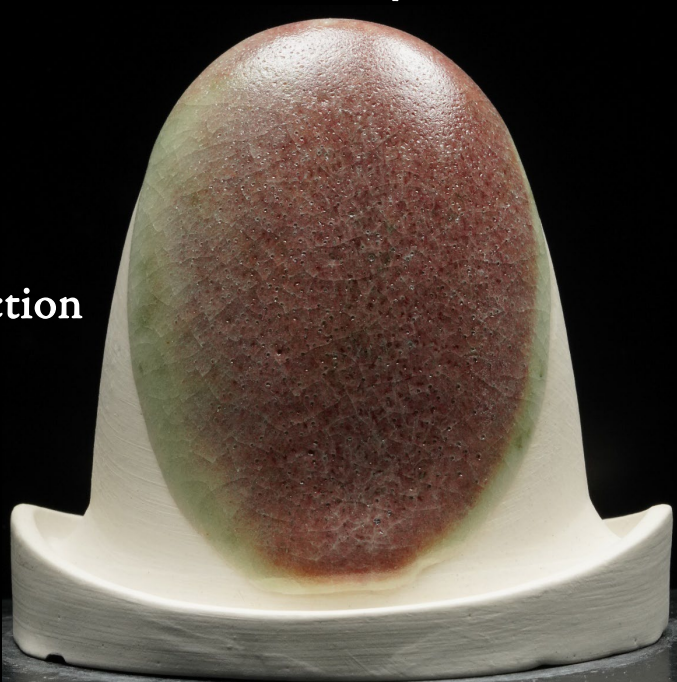
1-3 Second Dip



2-3 Second Dips



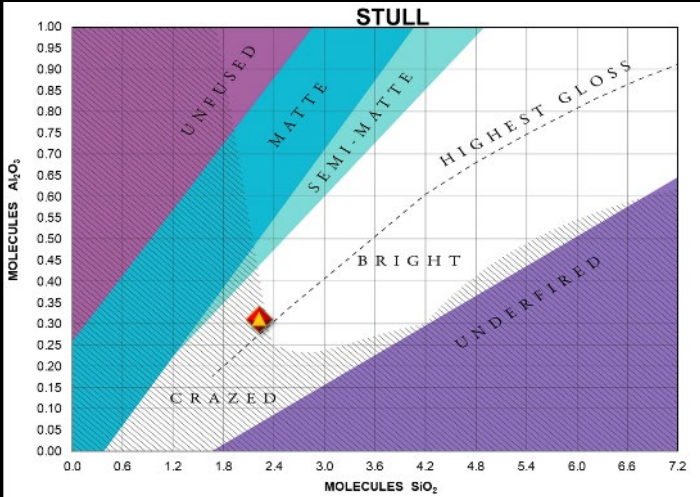
Reduction



Oxidation

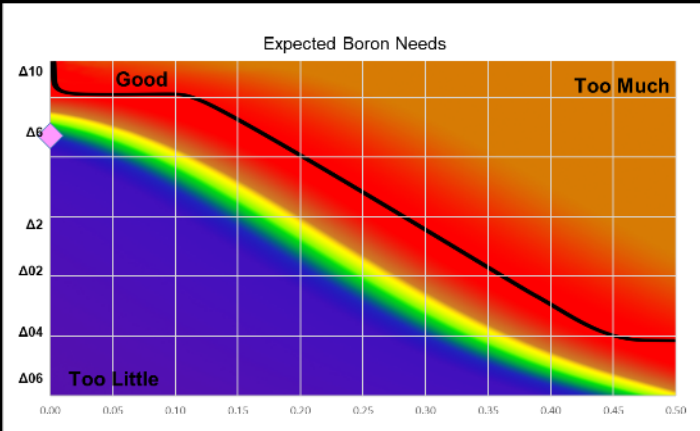
UMF

SiO ₂ :Al ₂ O ₃ Ratio 7.14 : 1		Alkali Metals 0.22		Alkaline Earths 0.78	
SiO ₂ 2.27	Collective "Al ₂ O ₃ " 0.32	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.37
B ₂ O ₃	Al ₂ O ₃ 0.32	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.39	FeO 0.01
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



EUMF

SiO ₂ :Al ₂ O ₃ Ratio 7.14 : 1		Alkali Metals 0.24		Alkaline Earths 0.76	
SiO ₂ 2.23	Collective "Al ₂ O ₃ " 0.31	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.37
B ₂ O ₃	Al ₂ O ₃ 0.31	Li ₂ O	CuO 0.02	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.39	FeO 0.00
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



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Chrome Oxide

0.5%

Oxidation

Reduction

1-3 Second Dip

2-3 Second Dips

1-3 Second Dip

2-3 Second Dips

2%



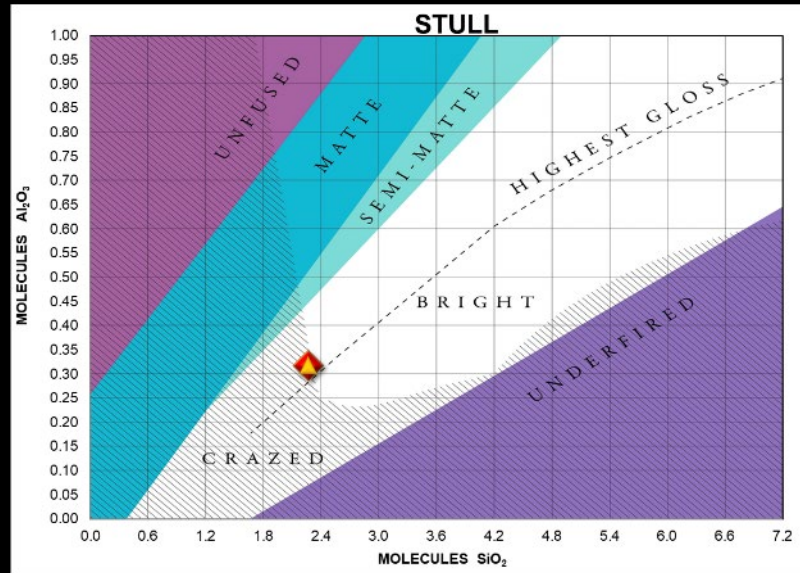
Ceramic
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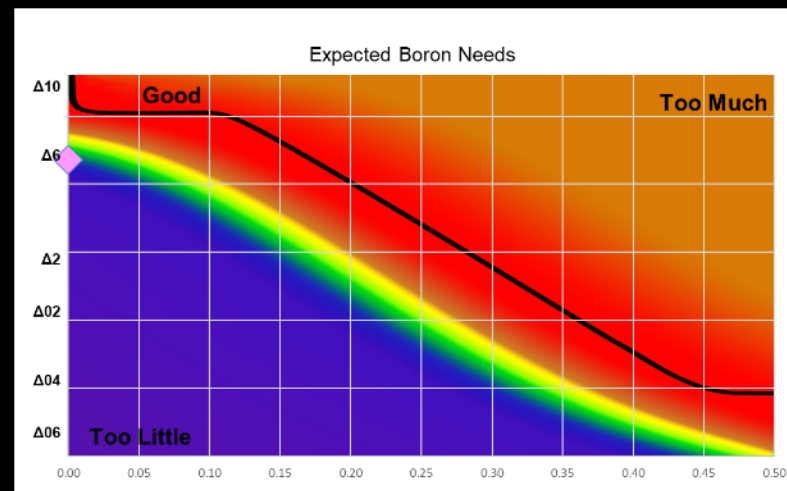
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Chrome Oxide

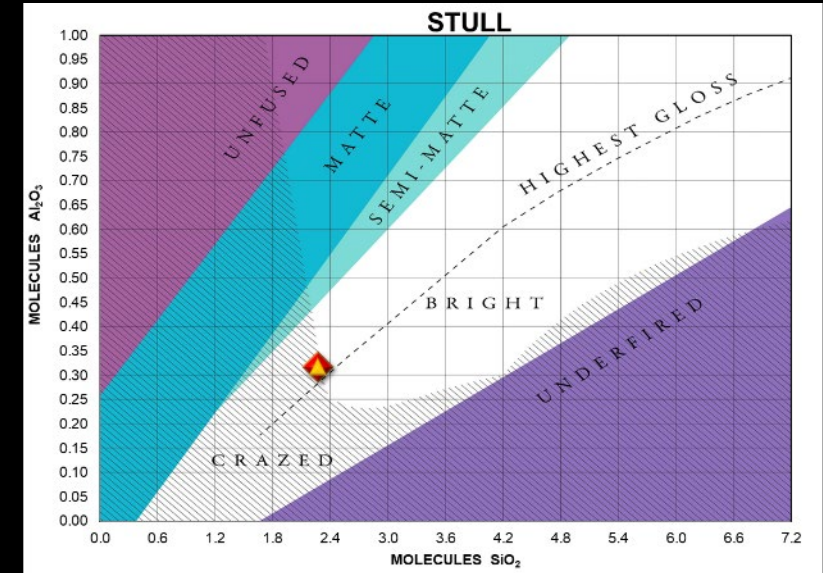
SiO ₂ :Al ₂ O ₃ Ratio 7.14 :1		Alkali Metals 0.22		Alkaline Earths 0.78	
SiO ₂ 2.27	Collective "Al ₂ O ₃ " 0.32	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.37
B ₂ O ₃	Al ₂ O ₃ 0.32	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.39	FeO 0.01
Cr ₂ O ₃ 0.01	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



0.5%



SiO ₂ :Al ₂ O ₃ Ratio 7.14 :1		Alkali Metals 0.22		Alkaline Earths 0.78	
SiO ₂ 2.27	Collective "Al ₂ O ₃ " 0.32	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.37
B ₂ O ₃	Al ₂ O ₃ 0.32	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.39	FeO 0.01
Cr ₂ O ₃ 0.03	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



2%



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Cobalt Carbonate

0.5%

Oxidation

Reduction

1-3 Second Dip

2-3 Second Dips

1-3 Second Dip

2-3 Second Dips

2%



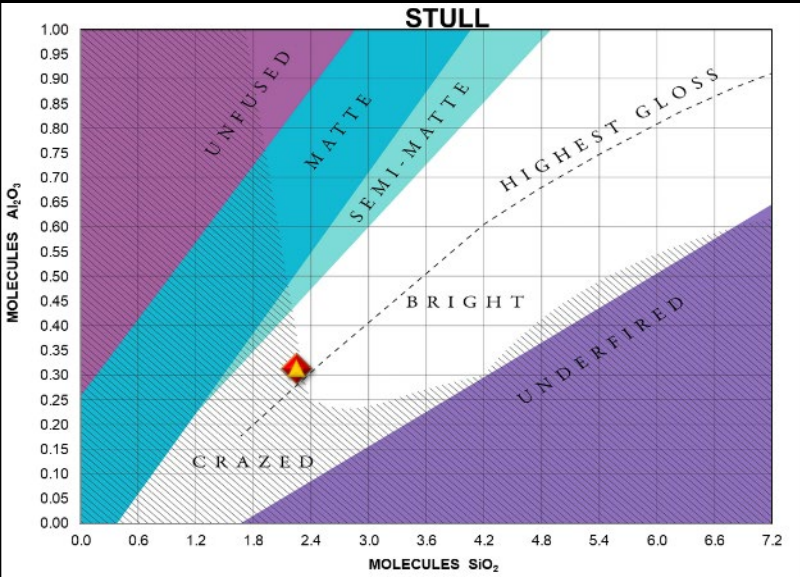
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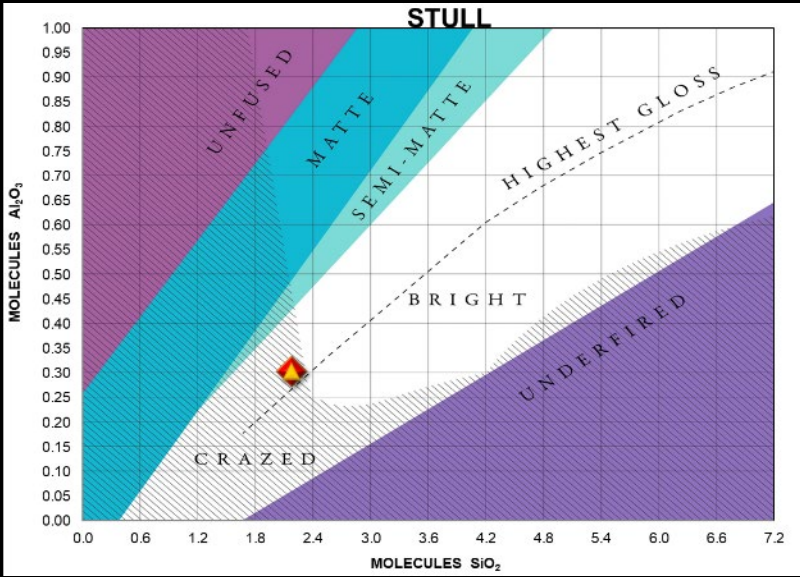
Cobalt Carbonate

SiO ₂ :Al ₂ O ₃ Ratio 7.14 :1		Alkali Metals 0.22		Alkaline Earths 0.78	
SiO ₂ 2.25	Collective "Al ₂ O ₃ " 0.31	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.37
B ₂ O ₃	Al ₂ O ₃ 0.31	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.39	FeO 0.00
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO 0.01

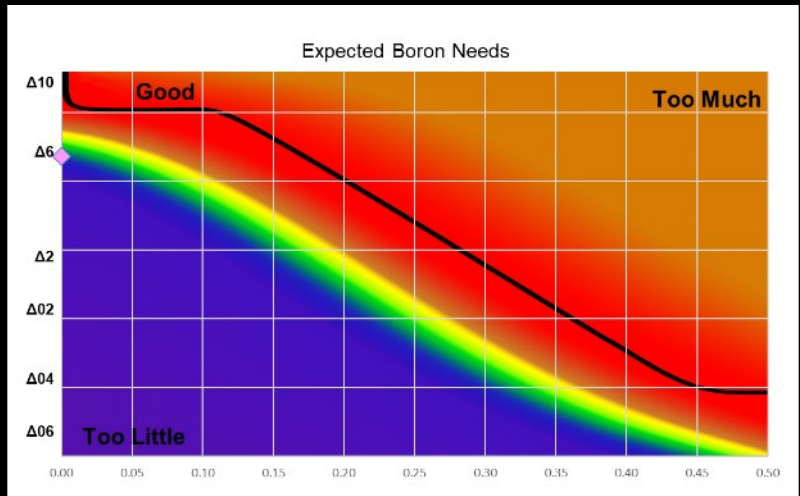
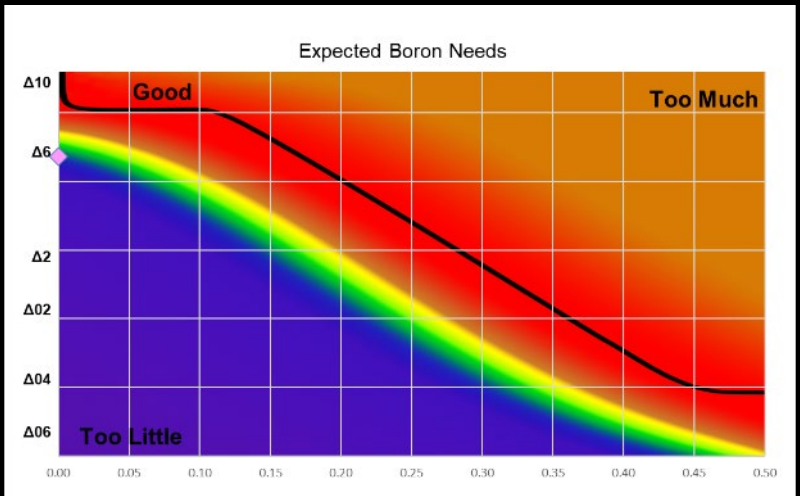


0.5%

SiO ₂ :Al ₂ O ₃ Ratio 7.14 :1		Alkali Metals 0.21		Alkaline Earths 0.79	
SiO ₂ 2.18	Collective "Al ₂ O ₃ " 0.30	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.36
B ₂ O ₃	Al ₂ O ₃ 0.30	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.38	FeO 0.00
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO 0.04



2%



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Cobalt Oxide

0.5%

Oxidation

Reduction

1-3 Second Dip

2-3 Second Dips

1-3 Second Dip

2-3 Second Dips

2%



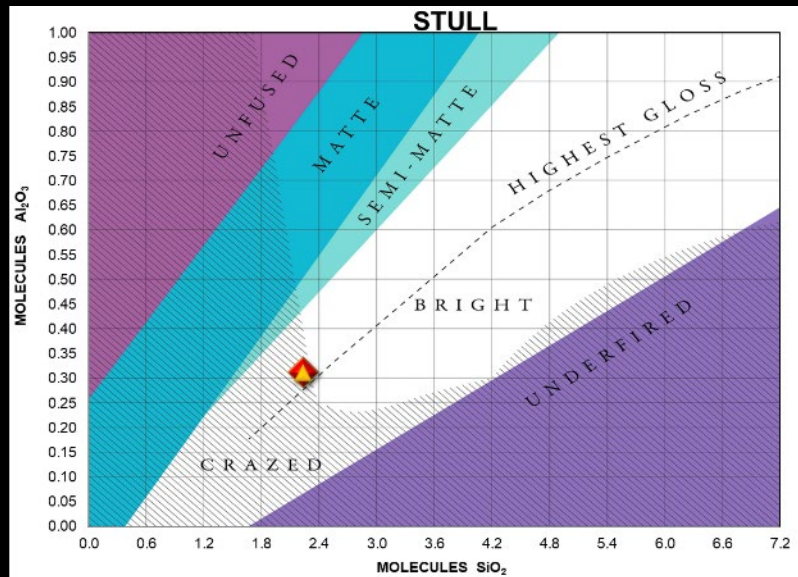
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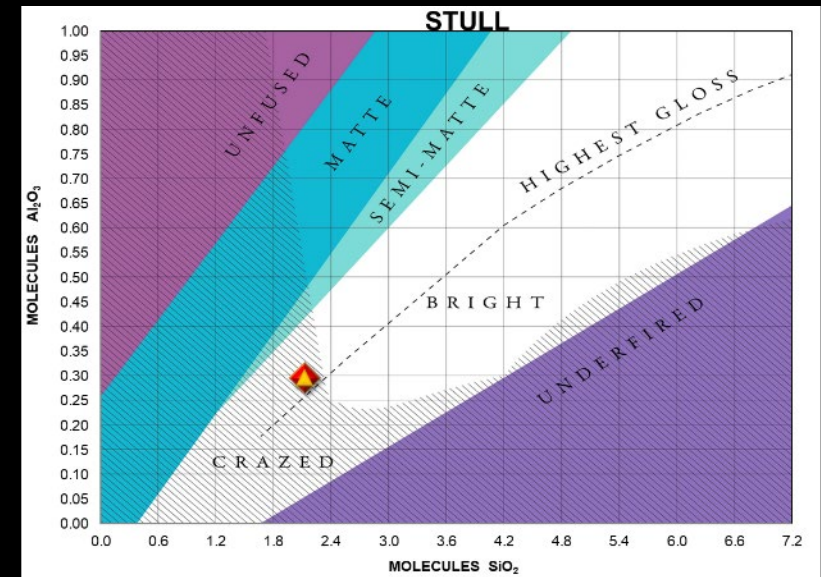
Cobalt Oxide

SiO ₂ :Al ₂ O ₃ Ratio 7.14 :1		Alkali Metals 0.22		Alkaline Earths 0.78	
SiO ₂ 2.23	Collective "Al ₂ O ₃ " 0.31	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.37
B ₂ O ₃	Al ₂ O ₃ 0.31	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.39	FeO 0.00
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO 0.02

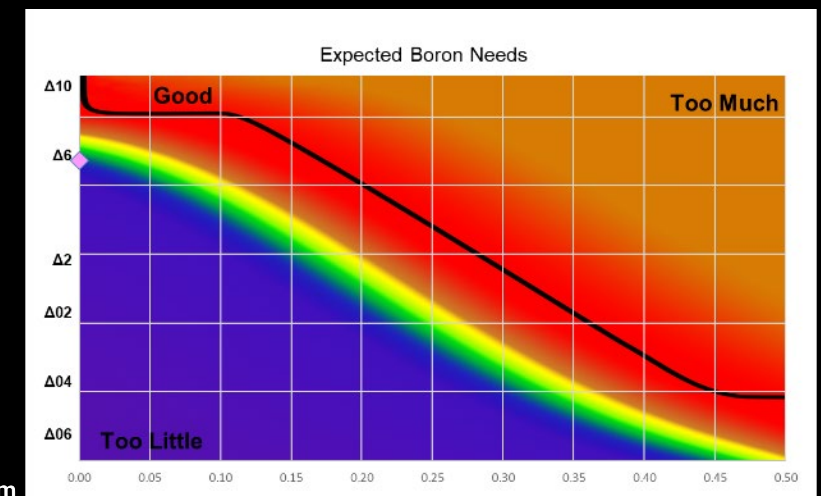


0.5%

SiO ₂ :Al ₂ O ₃ Ratio 7.14 :1		Alkali Metals 0.21		Alkaline Earths 0.79	
SiO ₂ 2.13	Collective "Al ₂ O ₃ " 0.30	Na ₂ O 0.16	K ₂ O 0.05	MgO 0.00	CaO 0.35
B ₂ O ₃	Al ₂ O ₃ 0.30	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.37	FeO 0.00
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO 0.06



2%



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Copper Carbonate

Oxidation

Reduction

1%



1-3 Second Dip



2-3 Second Dips

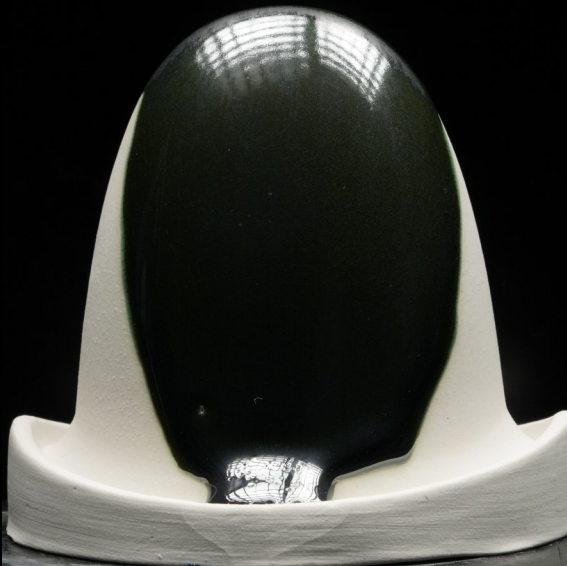


1-3 Second Dip



2-3 Second Dips

4%



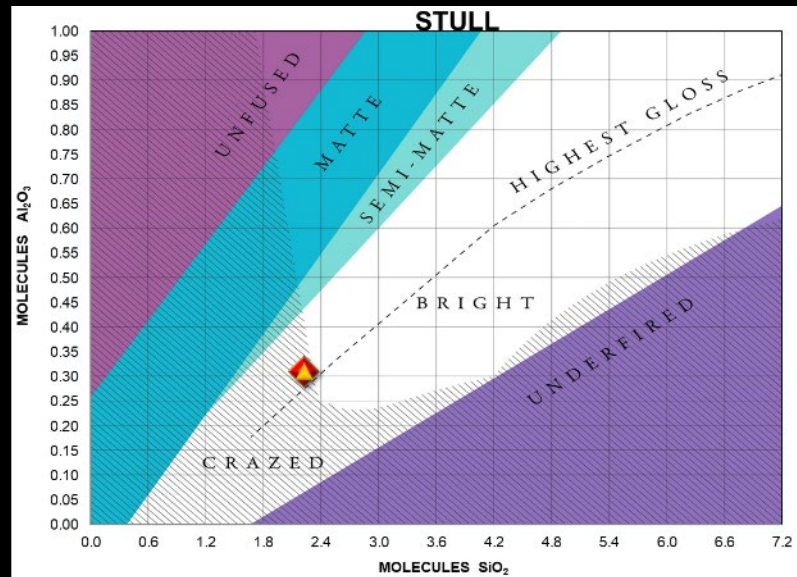
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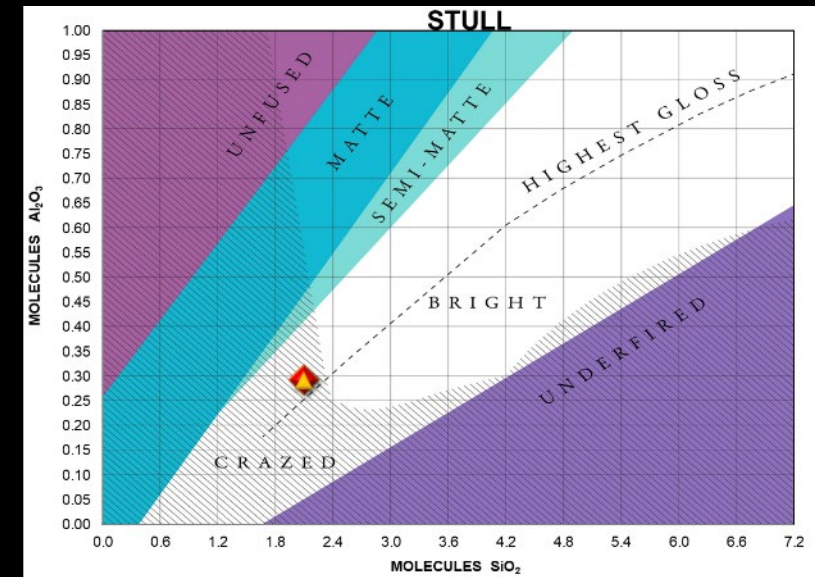
Copper Carbonate

SiO ₂ :Al ₂ O ₃ Ratio 7.14 :1		Alkali Metals 0.24		Alkaline Earths 0.76	
SiO ₂ 2.23	Collective "Al ₂ O ₃ " 0.31	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.37
B ₂ O ₃	Al ₂ O ₃ 0.31	Li ₂ O	CuO 0.02	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.39	FeO 0.00
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO

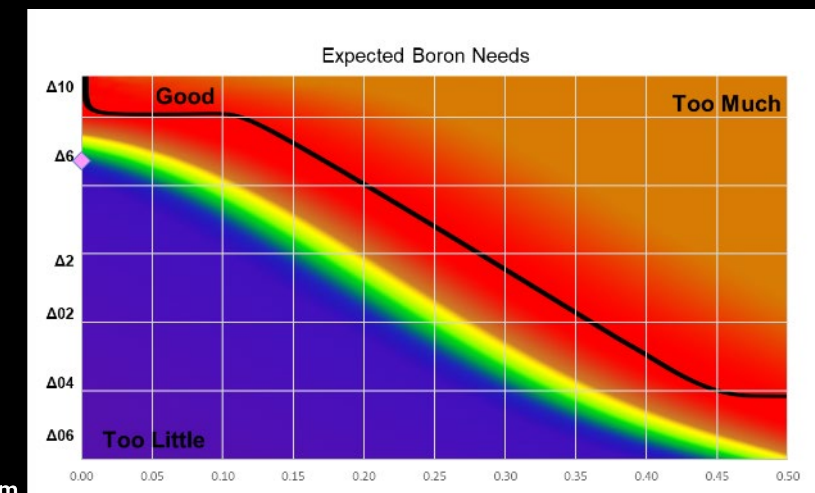
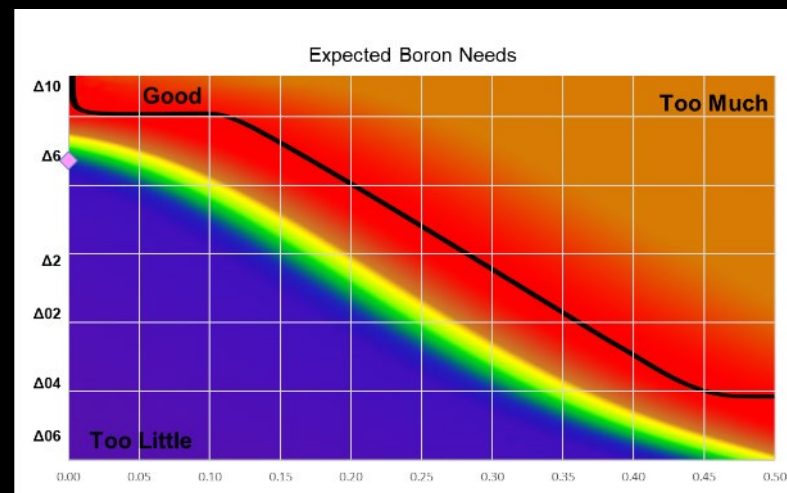


1%

SiO ₂ :Al ₂ O ₃ Ratio 7.14 :1		Alkali Metals 0.28		Alkaline Earths 0.72	
SiO ₂ 2.10	Collective "Al ₂ O ₃ " 0.29	Na ₂ O 0.16	K ₂ O 0.05	MgO 0.00	CaO 0.34
B ₂ O ₃	Al ₂ O ₃ 0.29	Li ₂ O	CuO 0.08	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.36	FeO 0.00
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



4%



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Copper Oxide-Black

Oxidation

Reduction

1%



1-3 Second Dip



2-3 Second Dips



1-3 Second Dip



2-3 Second Dips

4%



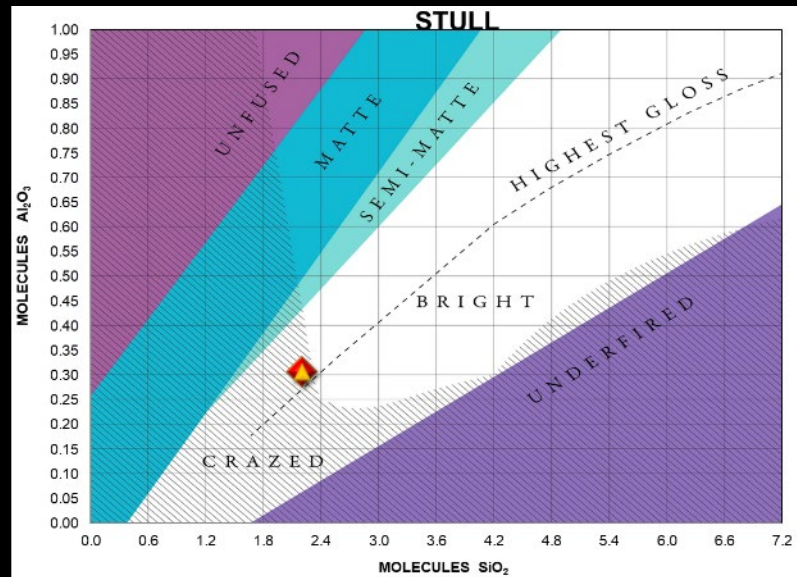
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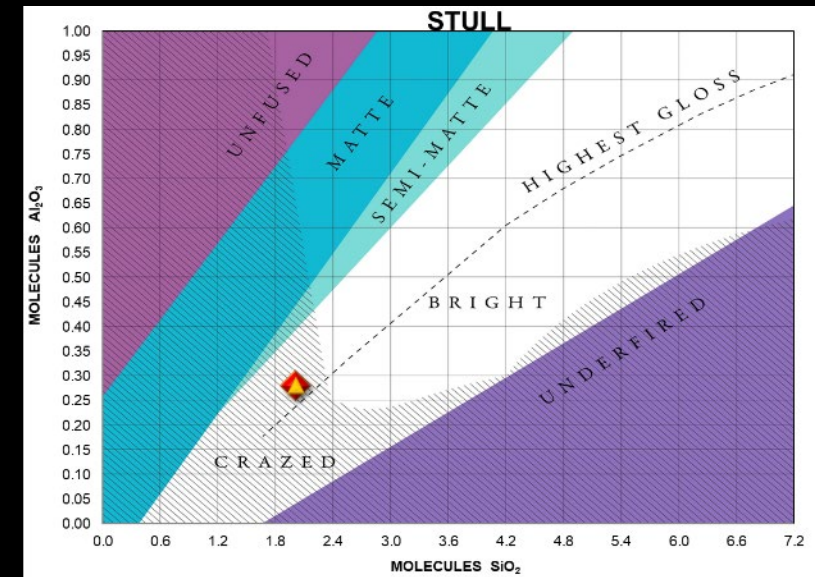
Copper Oxide-Black

SiO ₂ :Al ₂ O ₃ Ratio 7.14 :1		Alkali Metals 0.25		Alkaline Earths 0.75	
SiO ₂ 2.20	Collective "Al ₂ O ₃ " 0.31	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.36
B ₂ O ₃	Al ₂ O ₃ 0.31	Li ₂ O	CuO 0.03	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.38	FeO 0.00
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO

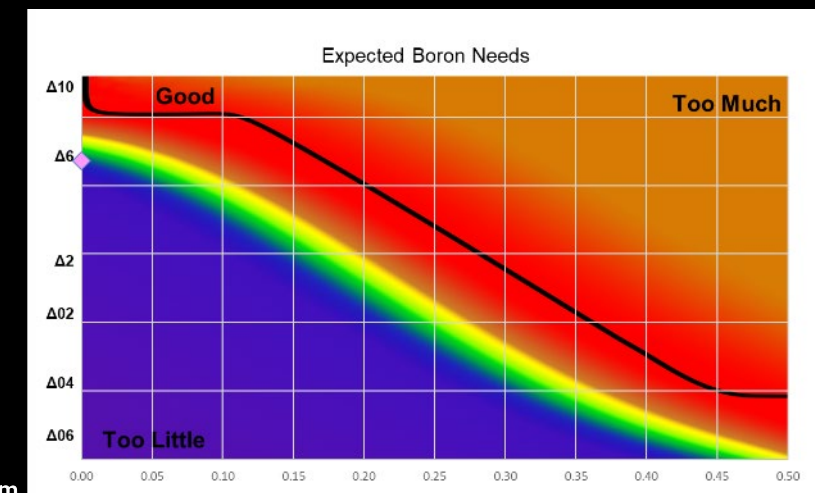
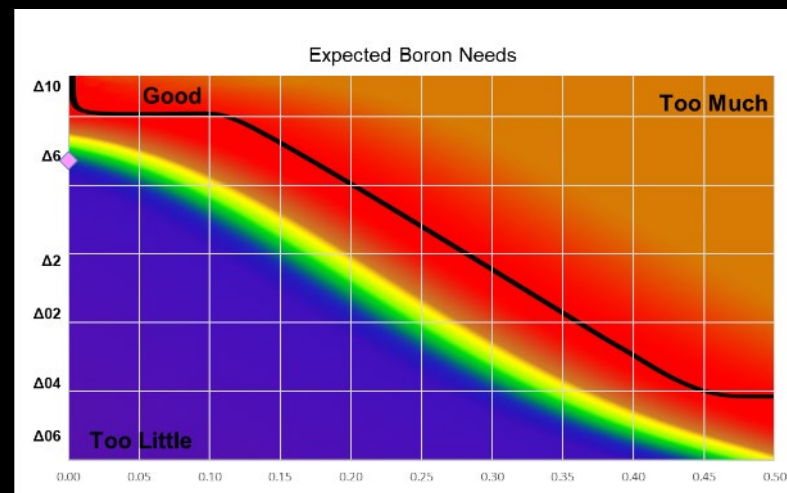


1%

SiO ₂ :Al ₂ O ₃ Ratio 7.14 :1		Alkali Metals 0.31		Alkaline Earths 0.69	
SiO ₂ 2.01	Collective "Al ₂ O ₃ " 0.28	Na ₂ O 0.15	K ₂ O 0.04	MgO 0.00	CaO 0.33
B ₂ O ₃	Al ₂ O ₃ 0.28	Li ₂ O	CuO 0.12	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.35	FeO 0.00
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



4%



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Red Iron Oxide

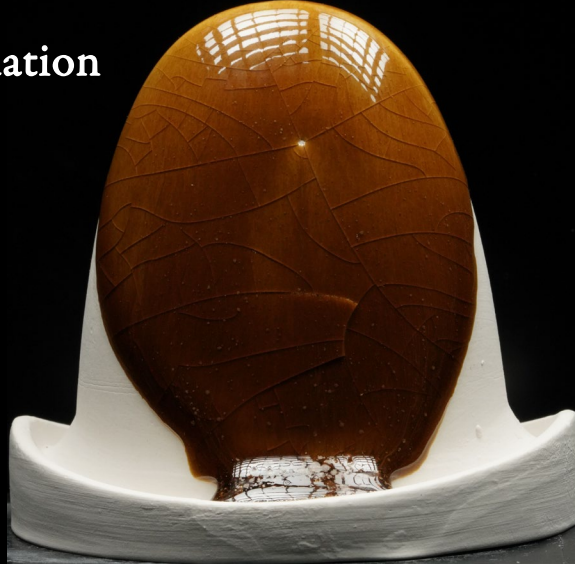
Oxidation

Reduction

3%



1-3 Second Dip



2-3 Second Dips



1-3 Second Dip



2-3 Second Dips

9%



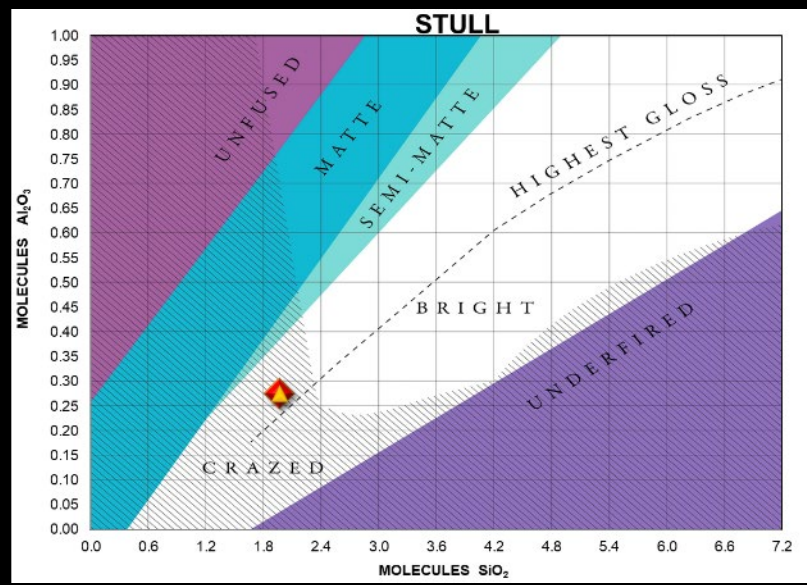
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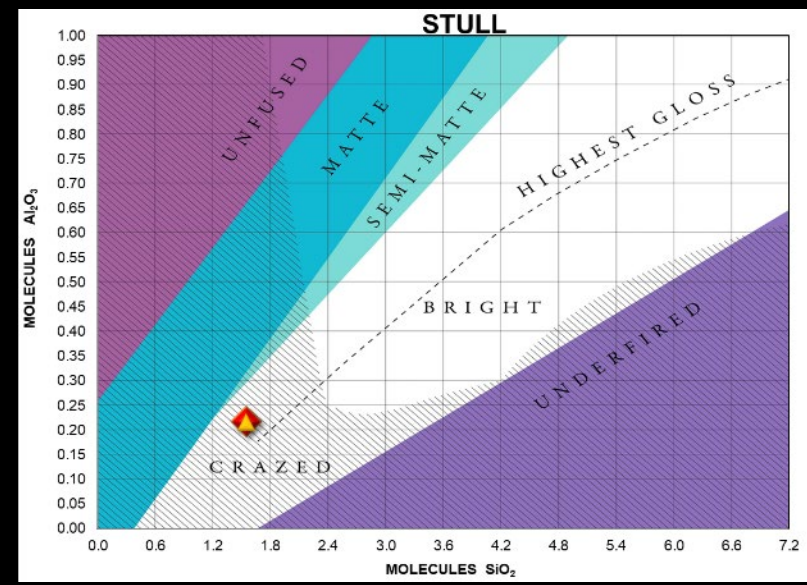
Red Iron Oxide

SiO ₂ :Al ₂ O ₃ Ratio 7.14 : 1		Alkali Metals 0.19		Alkaline Earths 0.81	
SiO ₂ 1.97	Collective "Al ₂ O ₃ " 0.28	Na ₂ O 0.15	K ₂ O 0.04	MgO 0.00	CaO 0.32
B ₂ O ₃	Al ₂ O ₃ 0.27	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.34	FeO 0.14
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO

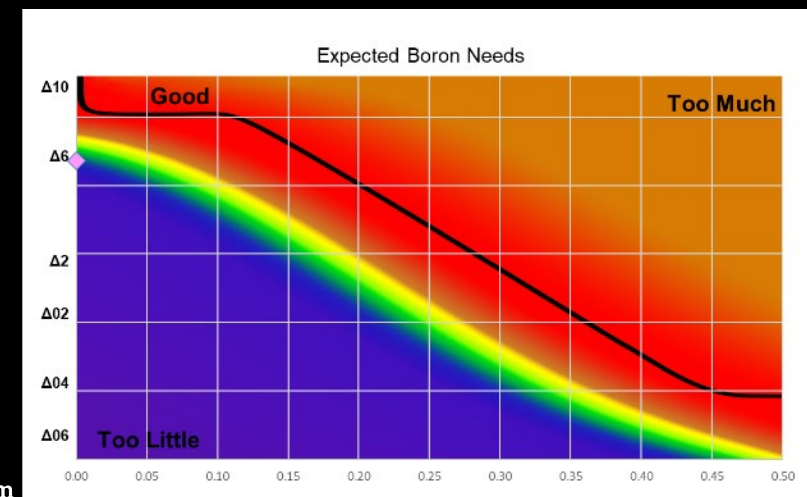


3%

SiO ₂ :Al ₂ O ₃ Ratio 7.14 : 1		Alkali Metals 0.15		Alkaline Earths 0.85	
SiO ₂ 1.55	Collective "Al ₂ O ₃ " 0.22	Na ₂ O 0.12	K ₂ O 0.03	MgO 0.00	CaO 0.25
B ₂ O ₃	Al ₂ O ₃ 0.22	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.27	FeO 0.32
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



9%



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Black Iron Oxide

Oxidation

Reduction

3%



1-3 Second Dip



2-3 Second Dips



1-3 Second Dip



2-3 Second Dips

9%



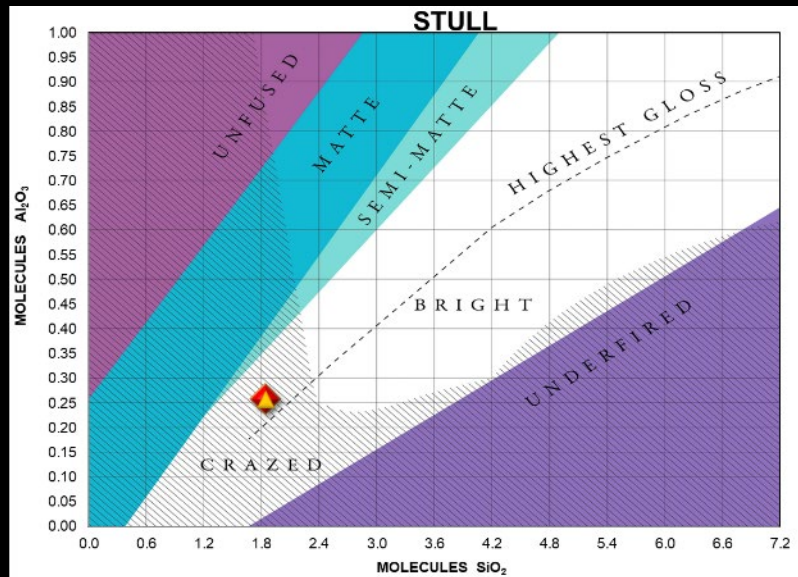
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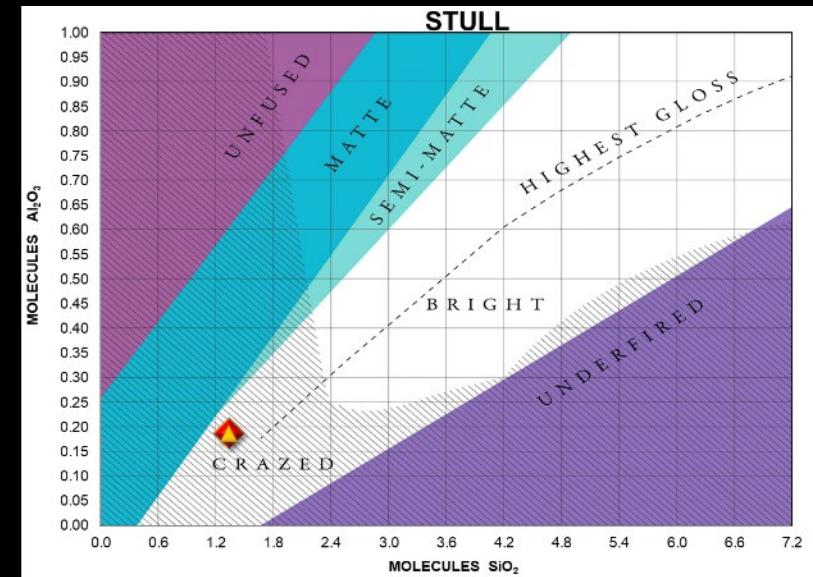
Black Iron Oxide

SiO ₂ :Al ₂ O ₃ Ratio 7.14 :1		Alkali Metals 0.18		Alkaline Earths 0.82	
SiO ₂ 1.84	Collective "Al ₂ O ₃ " 0.26	Na ₂ O 0.14	K ₂ O 0.04	MgO 0.00	CaO 0.30
B ₂ O ₃	Al ₂ O ₃ 0.26	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.32	FeO 0.19
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO

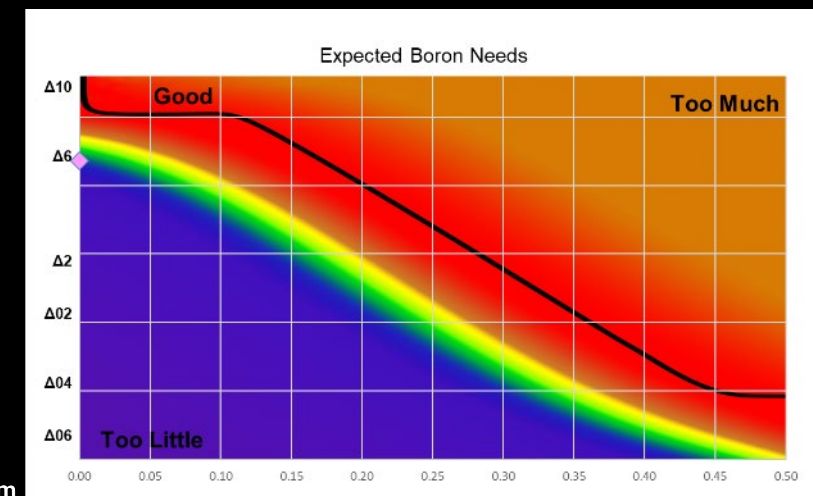


3%

SiO ₂ :Al ₂ O ₃ Ratio 7.14 :1		Alkali Metals 0.13		Alkaline Earths 0.87	
SiO ₂ 1.34	Collective "Al ₂ O ₃ " 0.19	Na ₂ O 0.10	K ₂ O 0.03	MgO 0.00	CaO 0.22
B ₂ O ₃	Al ₂ O ₃ 0.19	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.23	FeO 0.41
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



9%



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Yellow Iron Oxide

Oxidation

Reduction

3%



1-3 Second Dip



2-3 Second Dips



1-3 Second Dip



2-3 Second Dips

9%



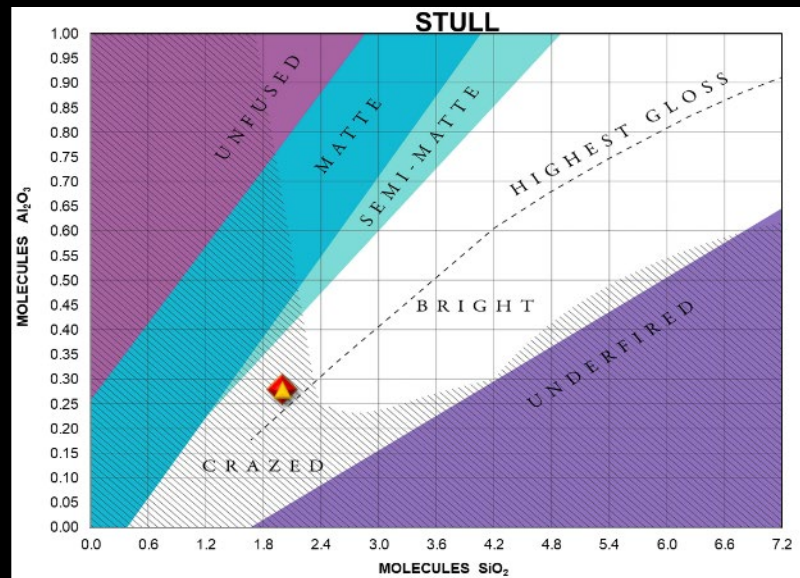
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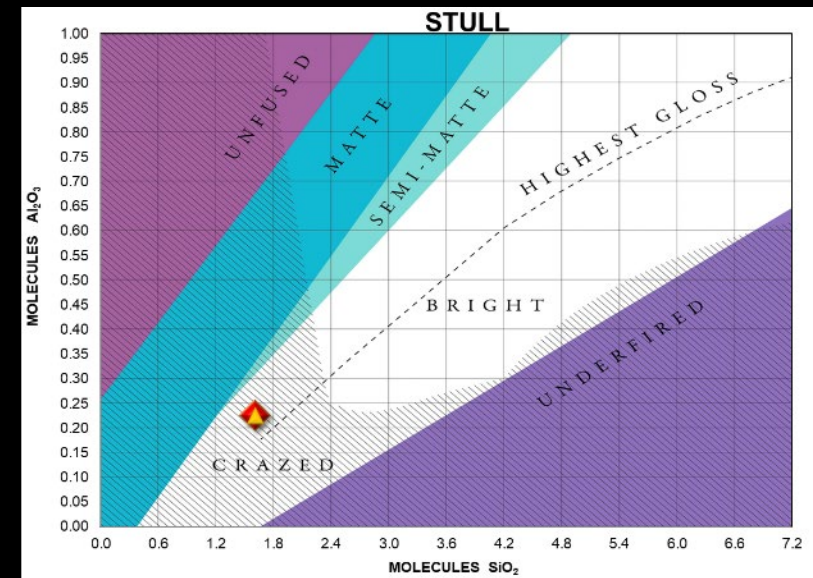
Yellow Iron Oxide

SiO ₂ :Al ₂ O ₃ Ratio 7.14 :1		Alkali Metals 0.20		Alkaline Earths 0.80	
SiO ₂ 2.00	Collective "Al ₂ O ₃ " 0.28	Na ₂ O 0.15	K ₂ O 0.04	MgO 0.00	CaO 0.33
B ₂ O ₃	Al ₂ O ₃ 0.28	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.35	FeO 0.12
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO

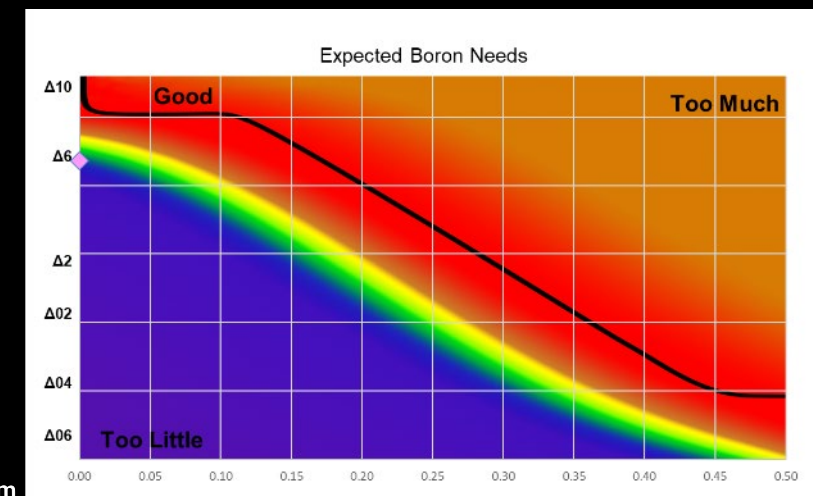


3%

SiO ₂ :Al ₂ O ₃ Ratio 7.14 :1		Alkali Metals 0.16		Alkaline Earths 0.84	
SiO ₂ 1.61	Collective "Al ₂ O ₃ " 0.23	Na ₂ O 0.12	K ₂ O 0.03	MgO 0.00	CaO 0.26
B ₂ O ₃	Al ₂ O ₃ 0.22	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.28	FeO 0.29
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



9%



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Manganese Dioxide

Oxidation

Reduction

1%



1-3 Second Dip



2-3 Second Dips



1-3 Second Dip



2-3 Second Dips

4%



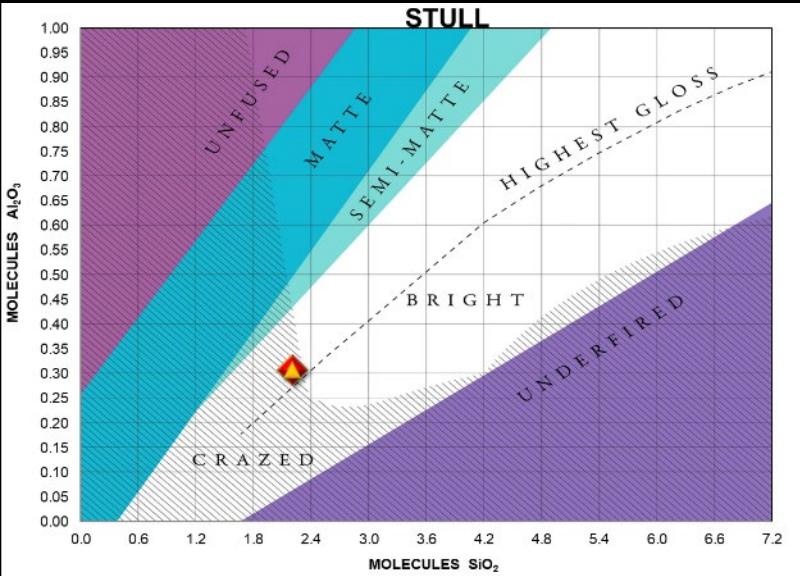
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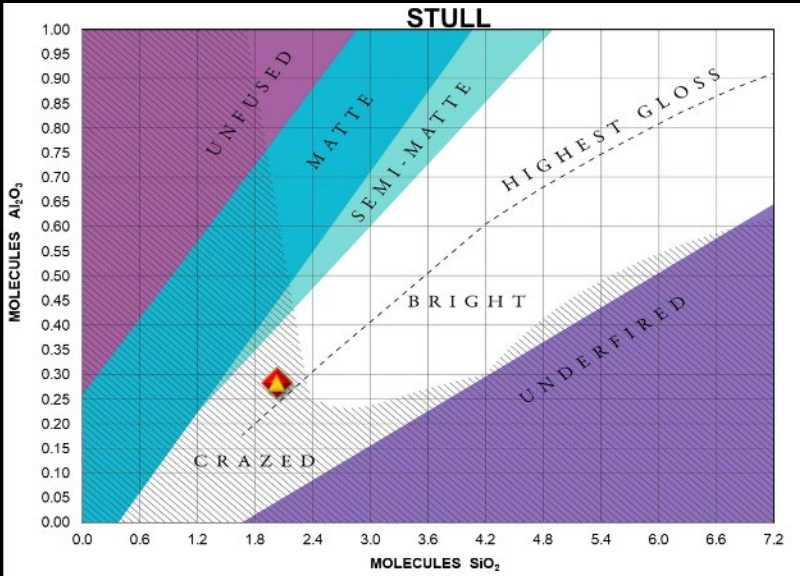
Manganese Dioxide

SiO ₂ :Al ₂ O ₃ Ratio 7.14 :1		Alkali Metals 0.22		Alkaline Earths 0.78	
SiO ₂ 2.21	Collective "Al ₂ O ₃ " 0.31	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.36
B ₂ O ₃	Al ₂ O ₃ 0.31	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.38	FeO 0.00
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂ 0.03	CoO

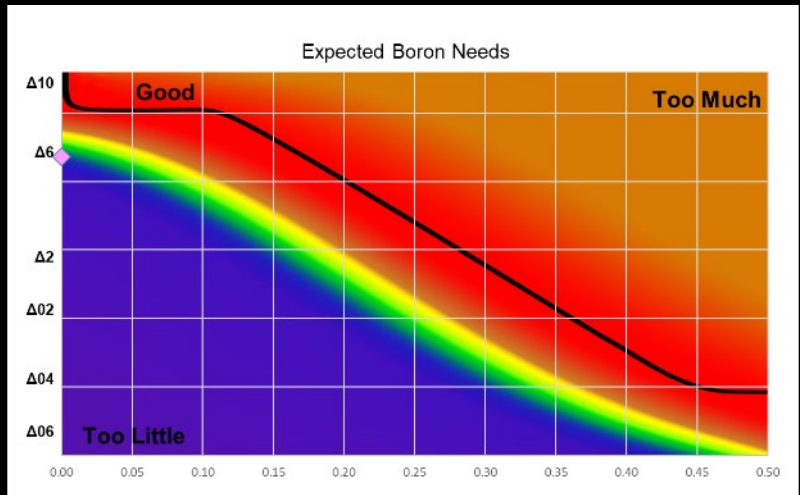


1%

SiO ₂ :Al ₂ O ₃ Ratio 7.14 :1		Alkali Metals 0.20		Alkaline Earths 0.80	
SiO ₂ 2.03	Collective "Al ₂ O ₃ " 0.28	Na ₂ O 0.16	K ₂ O 0.04	MgO 0.00	CaO 0.33
B ₂ O ₃	Al ₂ O ₃ 0.28	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.35	FeO 0.00
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂ 0.11	CoO



4%



Vanadium Pentoxide

Oxidation

Reduction

3%



1-3 Second Dip



2-3 Second Dips



1-3 Second Dip



2-3 Second Dips

9%



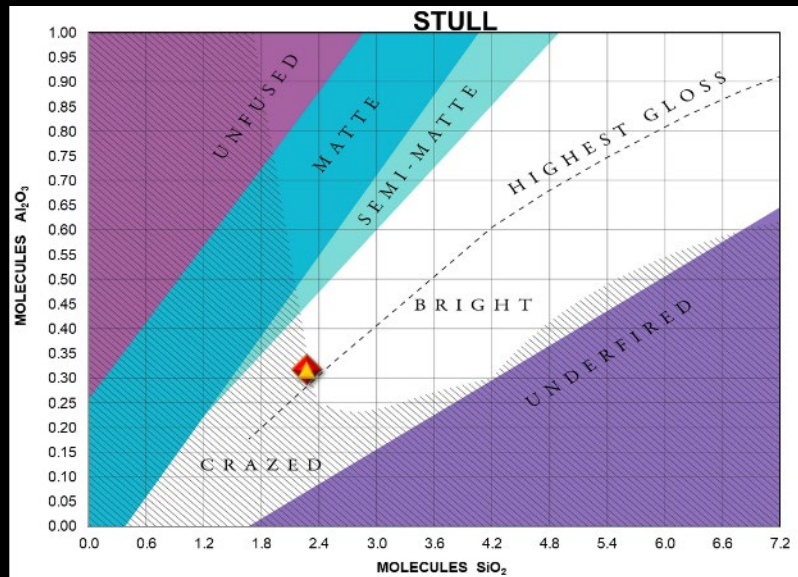
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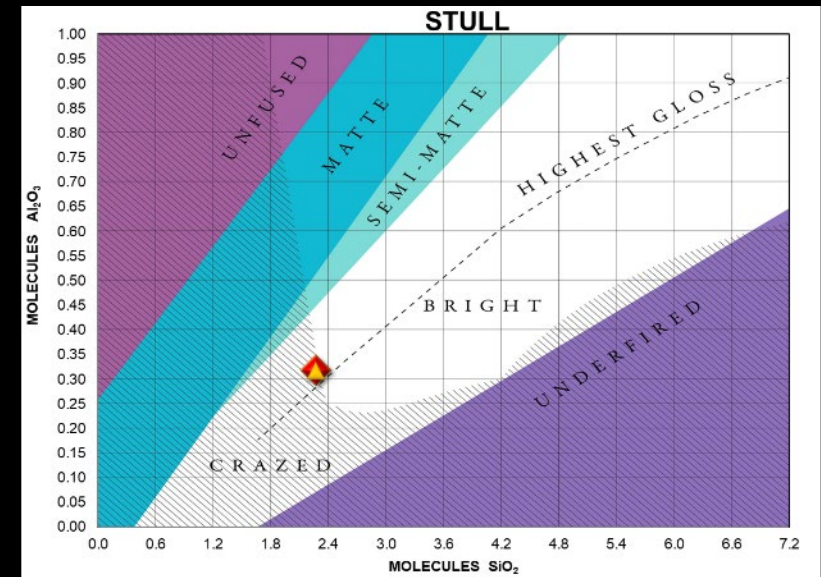
Vanadium Pentoxide

SiO ₂ :Al ₂ O ₃ Ratio 7.14 : 1		Alkali Metals 0.22		Alkaline Earths 0.78	
SiO ₂ 2.27	Collective "Al ₂ O ₃ " 0.32	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.37
B ₂ O ₃	Al ₂ O ₃ 0.32	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.39	FeO 0.01
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO

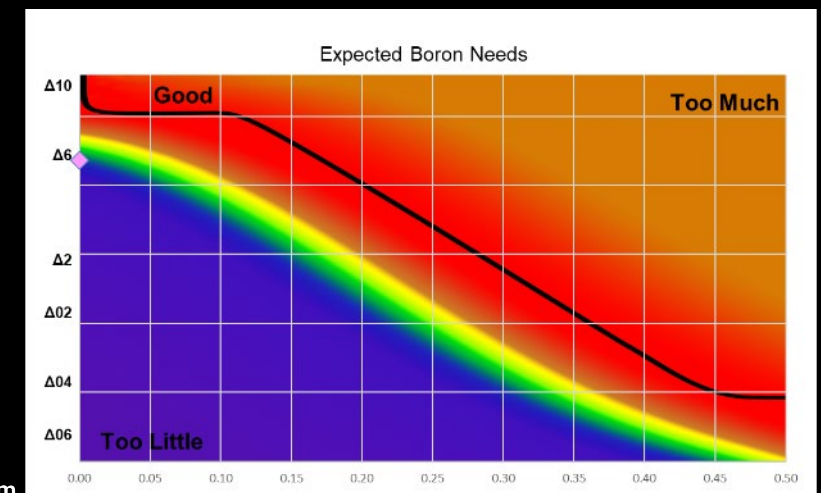
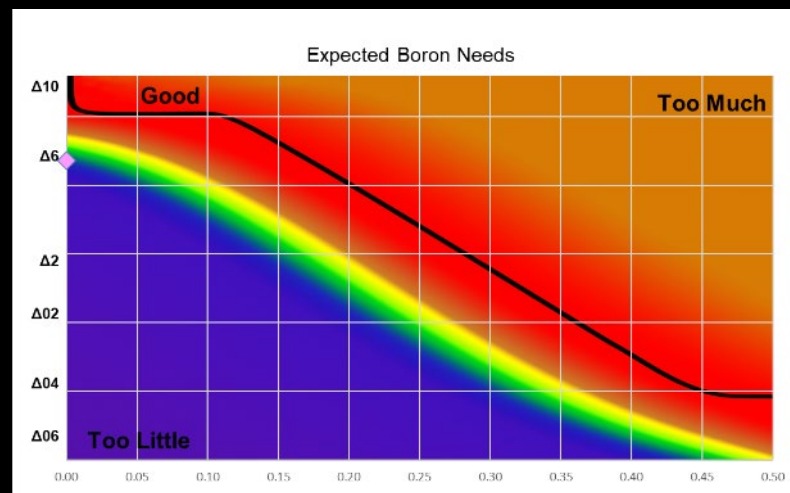


3%

SiO ₂ :Al ₂ O ₃ Ratio 7.14 : 1		Alkali Metals 0.22		Alkaline Earths 0.78	
SiO ₂ 2.27	Collective "Al ₂ O ₃ " 0.32	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.37
B ₂ O ₃	Al ₂ O ₃ 0.32	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.39	FeO 0.01
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



9%



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Dark Rutile

Oxidation

Reduction

3%



1-3 Second Dip



2-3 Second Dips



1-3 Second Dip



2-3 Second Dips

9%



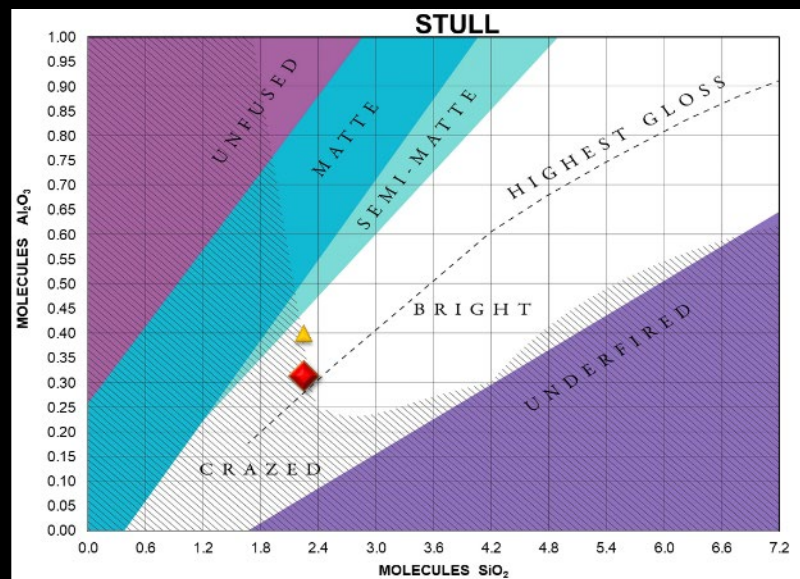
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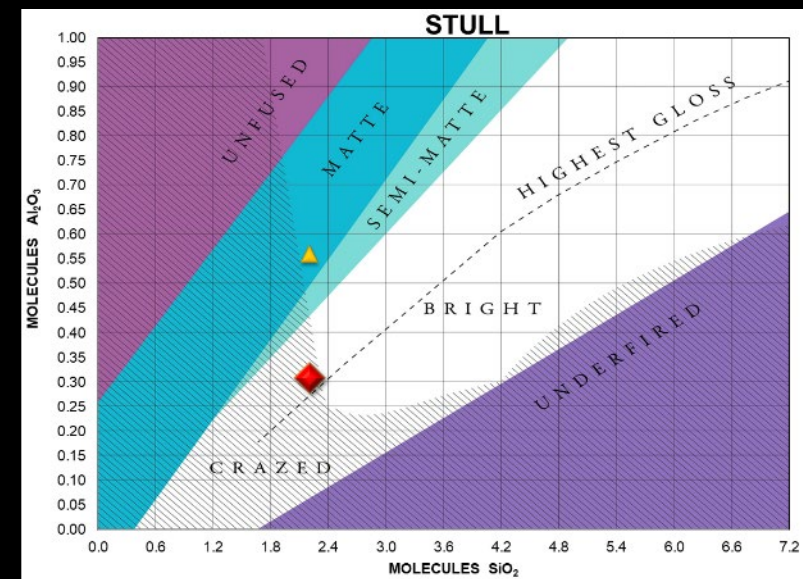
Dark Rutile

SiO ₂ :Al ₂ O ₃ Ratio 5.61 :1		Alkali Metals 0.22		Alkaline Earths 0.78	
SiO ₂ 2.25	Collective "Al ₂ O ₃ " 0.40	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.37
B ₂ O ₃	Al ₂ O ₃ 0.31	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.09	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.39	FeO 0.01
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO

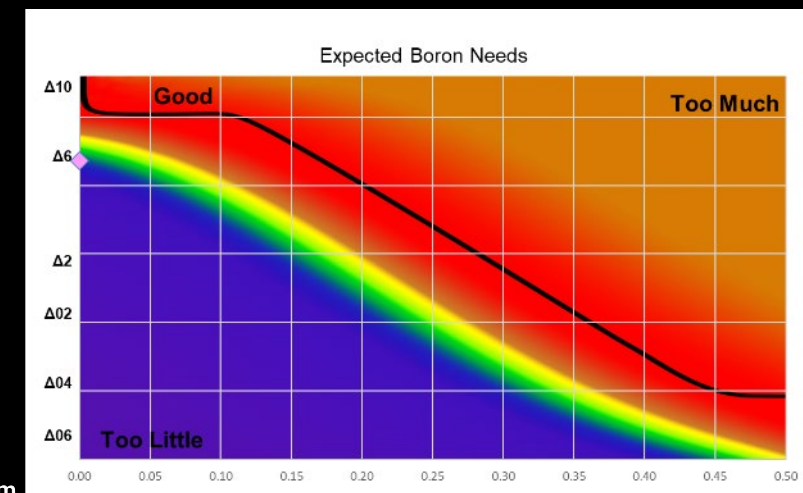
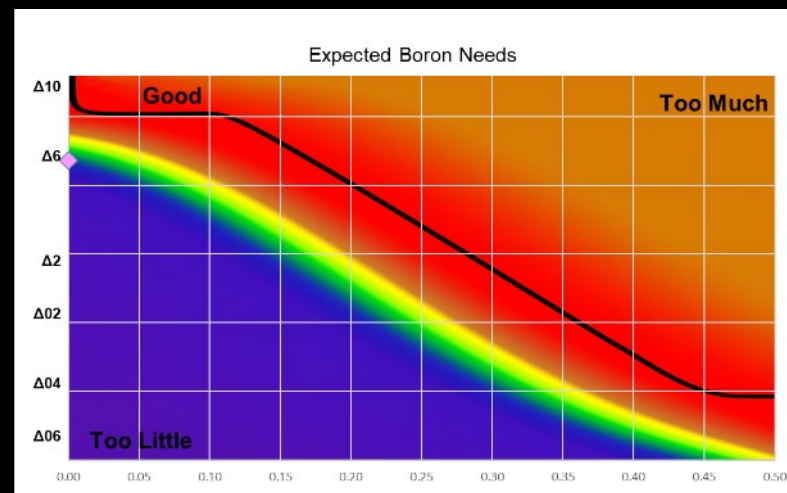


3%

SiO ₂ :Al ₂ O ₃ Ratio 3.93 :1		Alkali Metals 0.22		Alkaline Earths 0.78	
SiO ₂ 2.21	Collective "Al ₂ O ₃ " 0.56	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.36
B ₂ O ₃	Al ₂ O ₃ 0.31	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.25	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.38	FeO 0.03
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



9%



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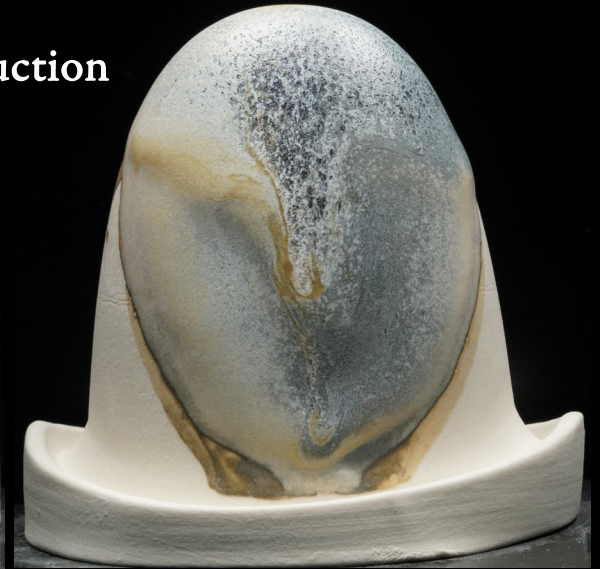
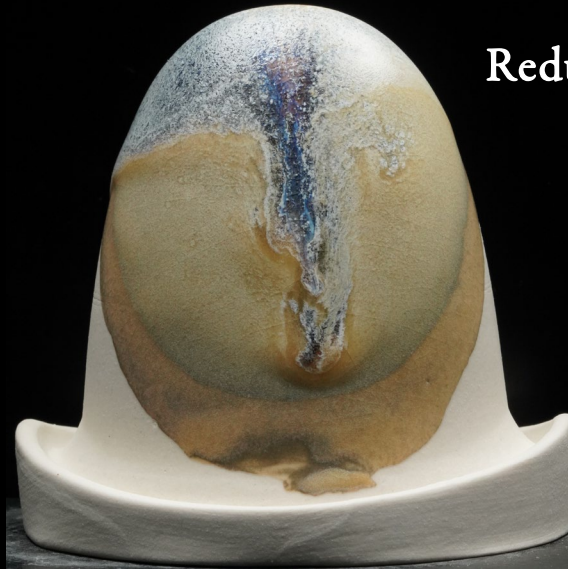
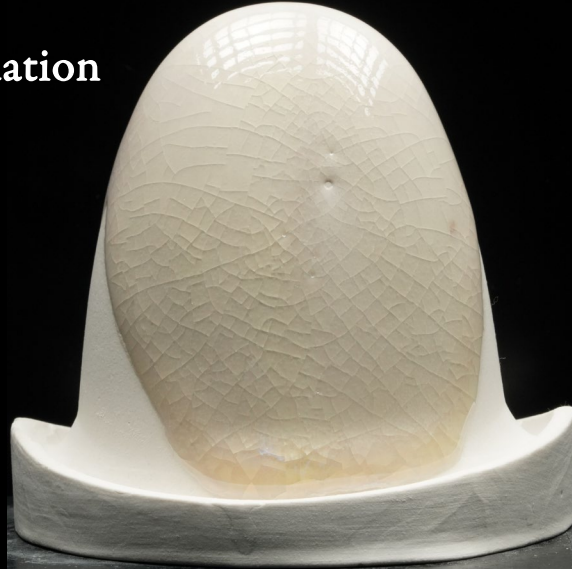
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Light Rutile

Oxidation

Reduction

3%



1-3 Second Dip

2-3 Second Dips

1-3 Second Dip

2-3 Second Dips

9%



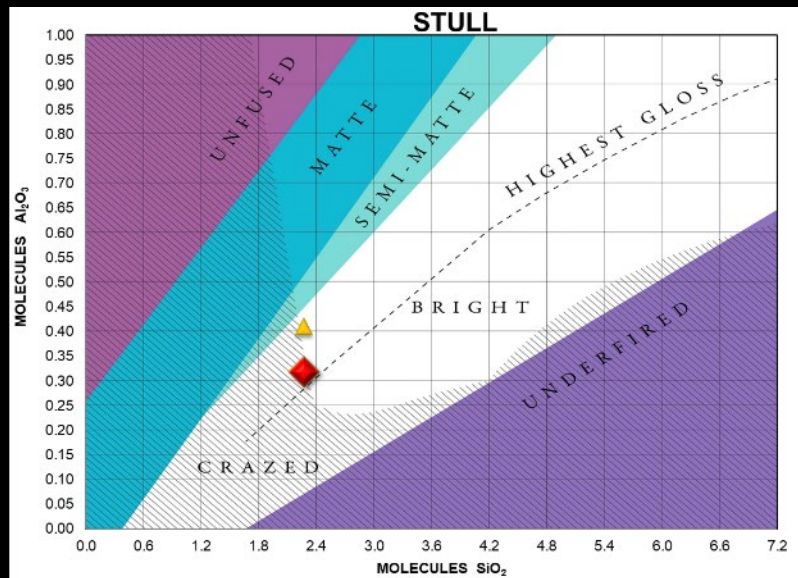
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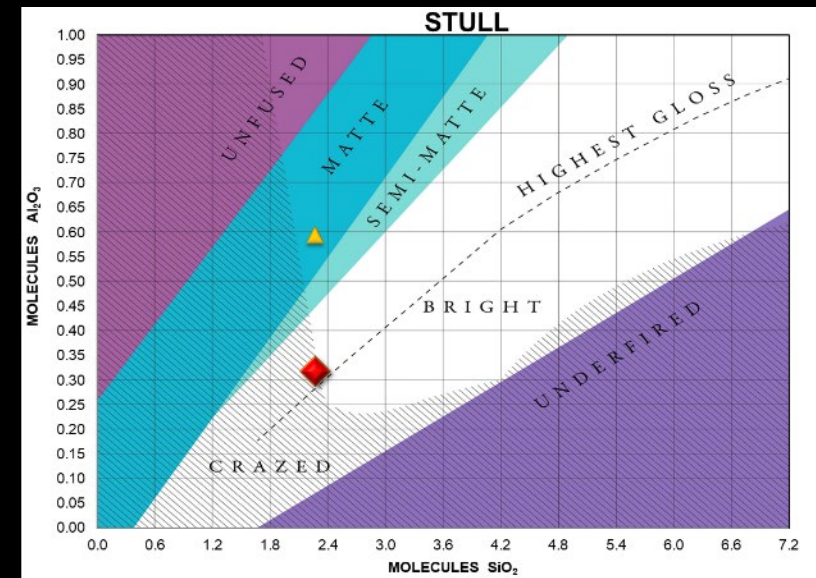
Light Rutile

SiO ₂ :Al ₂ O ₃ Ratio 5.53 :1		Alkali Metals 0.22		Alkaline Earths 0.78	
SiO ₂ 2.27	Collective "Al ₂ O ₃ " 0.41	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.37
B ₂ O ₃	Al ₂ O ₃ 0.32	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.09	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.39	FeO 0.01
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



3%

SiO ₂ :Al ₂ O ₃ Ratio 3.82 :1		Alkali Metals 0.22		Alkaline Earths 0.78	
SiO ₂ 2.27	Collective "Al ₂ O ₃ " 0.60	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.37
B ₂ O ₃	Al ₂ O ₃ 0.32	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.28	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.39	FeO 0.01
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



9%



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Titanium Dioxide

Oxidation

Reduction

3%



1-3 Second Dip

2-3 Second Dips

1-3 Second Dip

2-3 Second Dips

9%



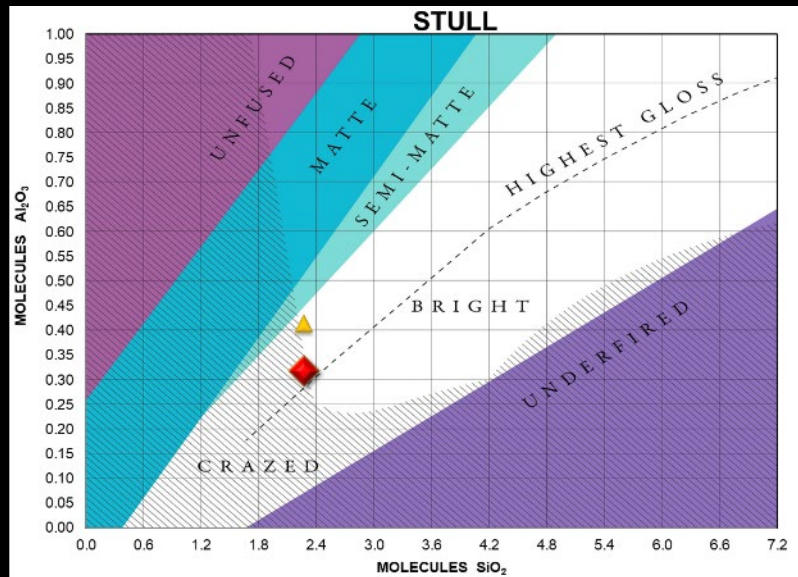
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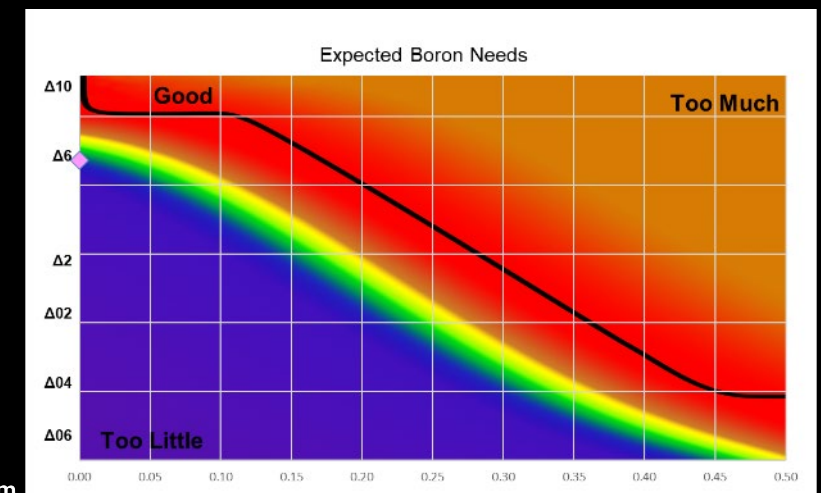
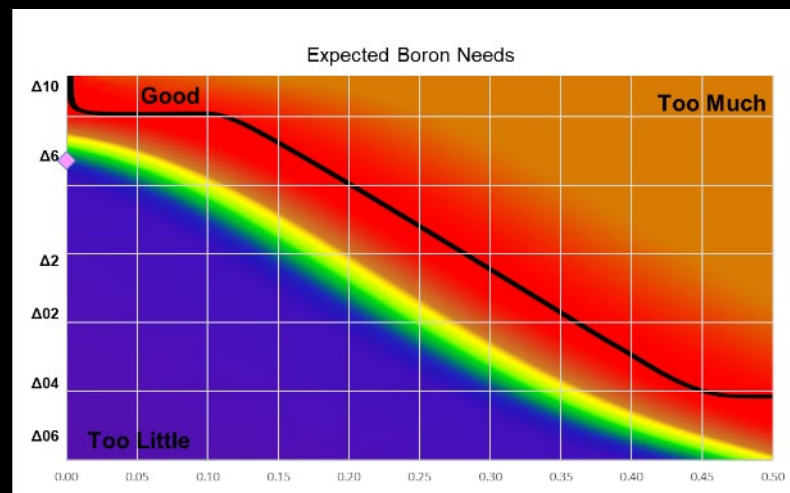
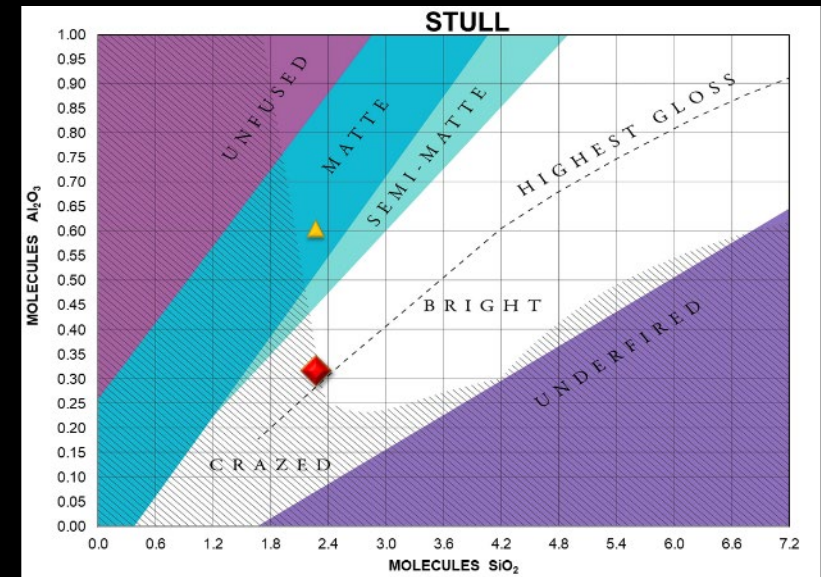
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Titanium Dioxide

SiO ₂ :Al ₂ O ₃ Ratio 5.48 :1		Alkali Metals 0.22		Alkaline Earths 0.78	
SiO ₂ 2.27	Collective "Al ₂ O ₃ " 0.41	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.37
B ₂ O ₃	Al ₂ O ₃ 0.32	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.10	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.39	FeO 0.01
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



SiO ₂ :Al ₂ O ₃ Ratio 3.75 :1		Alkali Metals 0.22		Alkaline Earths 0.78	
SiO ₂ 2.27	Collective "Al ₂ O ₃ " 0.61	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.37
B ₂ O ₃	Al ₂ O ₃ 0.32	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.29	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.39	FeO 0.01
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



Nickel Carbonate

Oxidation

Reduction

2%



1-3 Second Dip



2-3 Second Dips



1-3 Second Dip



2-3 Second Dips

6%



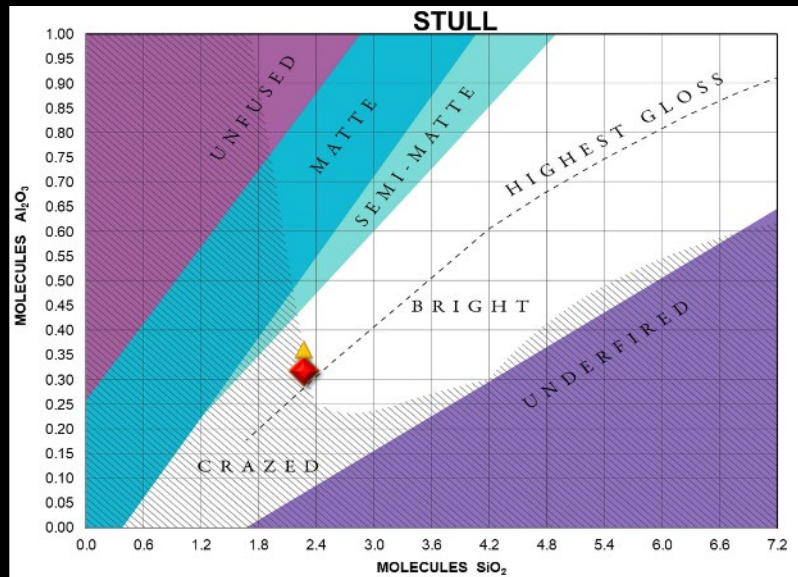
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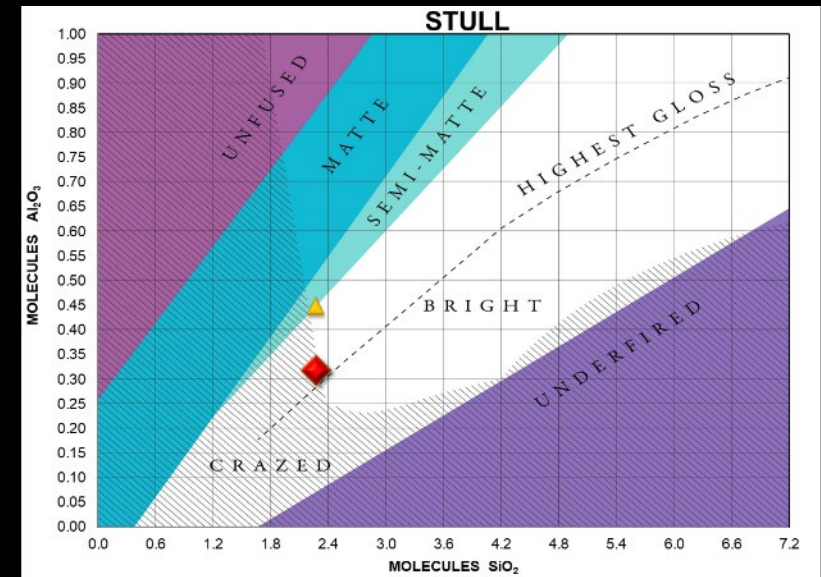
Nickel Carbonate

SiO ₂ :Al ₂ O ₃ Ratio 6.28 :1		Alkali Metals 0.22		Alkaline Earths 0.78	
SiO ₂ 2.27	Collective "Al ₂ O ₃ " 0.36	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.37
B ₂ O ₃	Al ₂ O ₃ 0.32	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO 0.04	Bi ₂ O ₃	SnO ₂	ZnO 0.39	FeO 0.01
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO

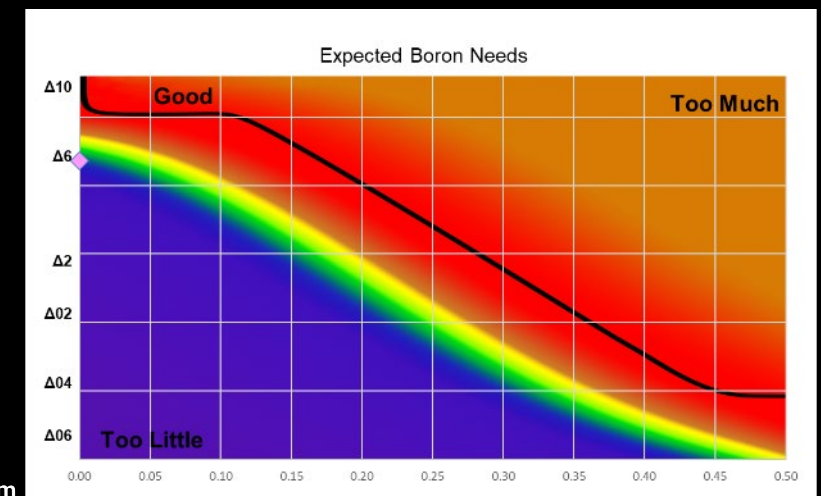


2%

SiO ₂ :Al ₂ O ₃ Ratio 5.06 :1		Alkali Metals 0.22		Alkaline Earths 0.78	
SiO ₂ 2.27	Collective "Al ₂ O ₃ " 0.45	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.37
B ₂ O ₃	Al ₂ O ₃ 0.32	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO 0.13	Bi ₂ O ₃	SnO ₂	ZnO 0.39	FeO 0.01
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



6%



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Nickel Oxide-Black

Oxidation

Reduction

2%



1-3 Second Dip



2-3 Second Dips

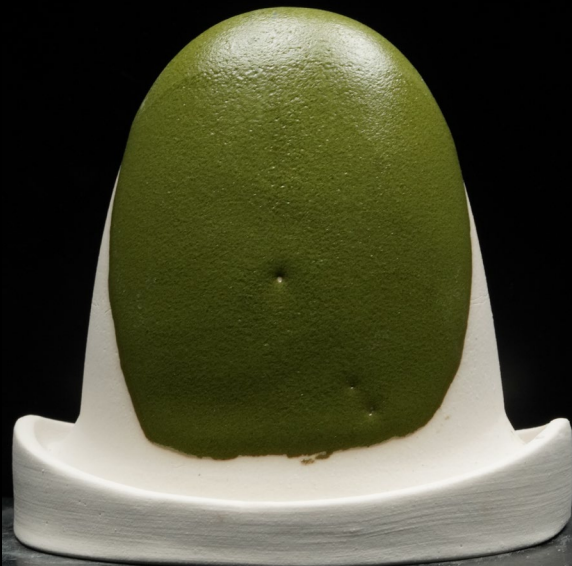


1-3 Second Dip



2-3 Second Dips

6%



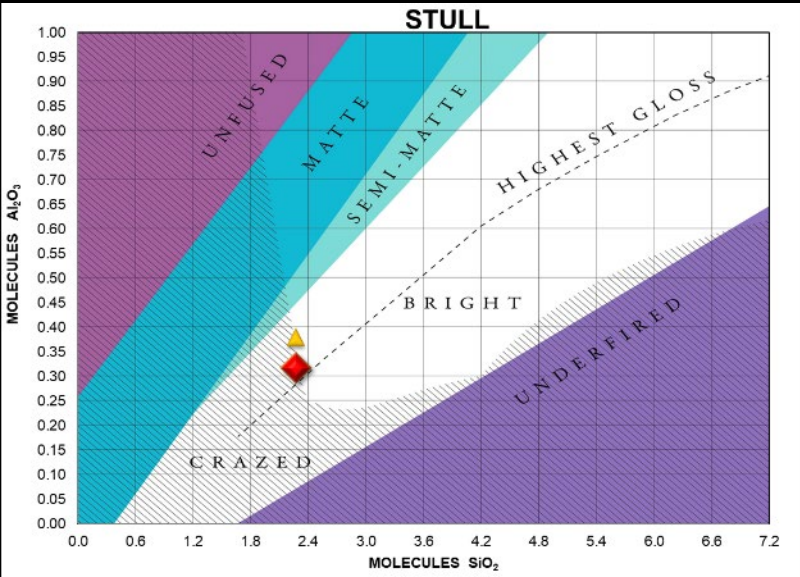
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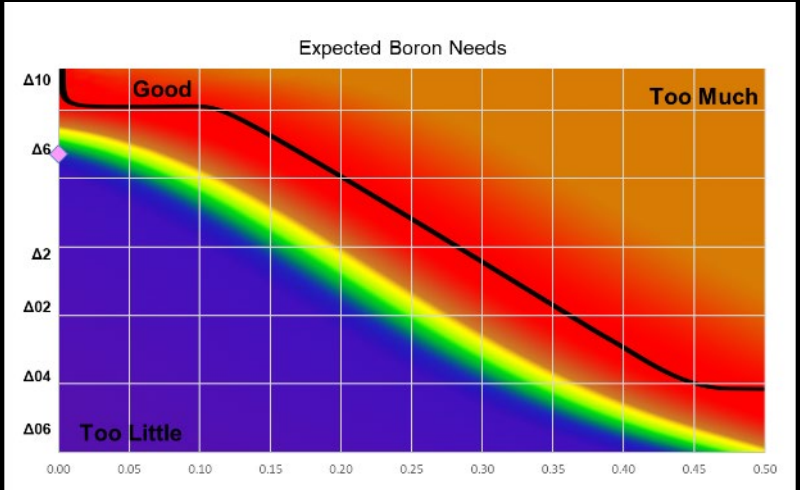
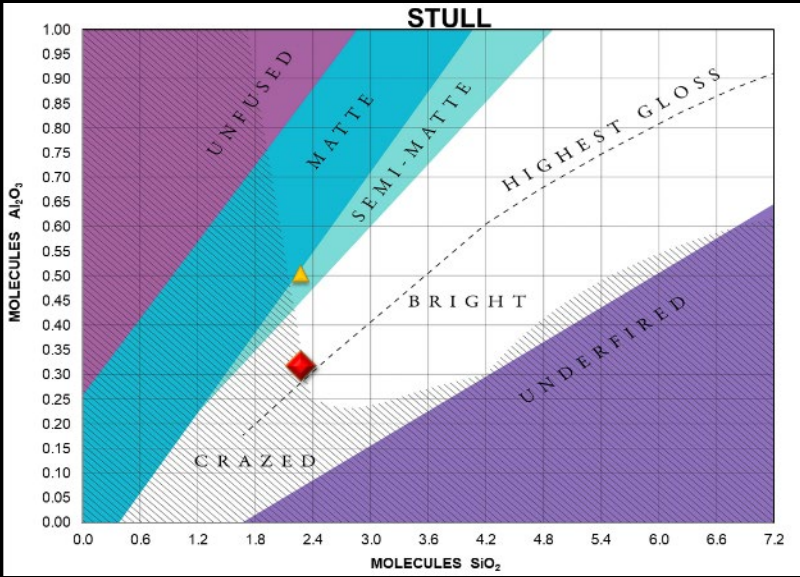
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Nickel Oxide-Black

SiO ₂ :Al ₂ O ₃ Ratio 5.97 :1		Alkali Metals 0.22		Alkaline Earths 0.78	
SiO ₂ 2.27	Collective "Al ₂ O ₃ " 0.38	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.37
B ₂ O ₃	Al ₂ O ₃ 0.32	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO 0.06	Bi ₂ O ₃	SnO ₂	ZnO 0.39	FeO 0.01
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



SiO ₂ :Al ₂ O ₃ Ratio 4.50 :1		Alkali Metals 0.22		Alkaline Earths 0.78	
SiO ₂ 2.27	Collective "Al ₂ O ₃ " 0.51	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.37
B ₂ O ₃	Al ₂ O ₃ 0.32	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO 0.19	Bi ₂ O ₃	SnO ₂	ZnO 0.39	FeO 0.01
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



Tin Oxide

Oxidation

Reduction

3%



1-3 Second Dip



2-3 Second Dips



1-3 Second Dip



2-3 Second Dips

6%



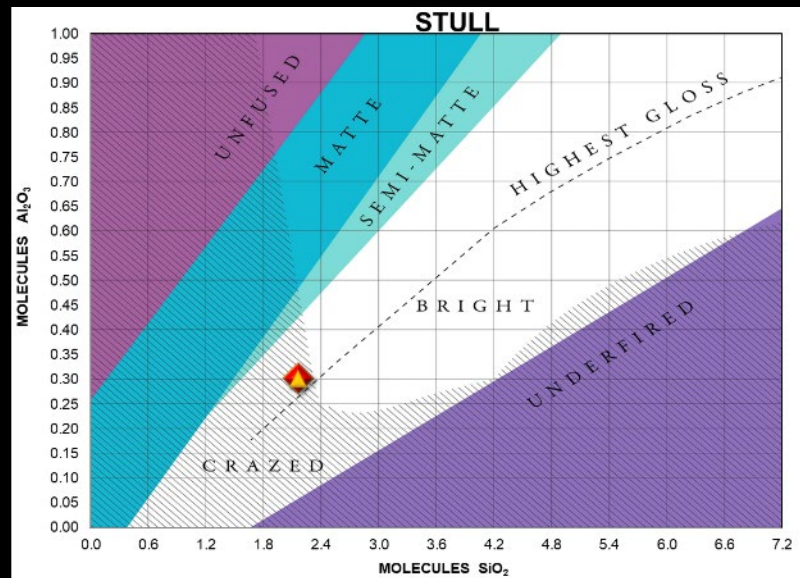
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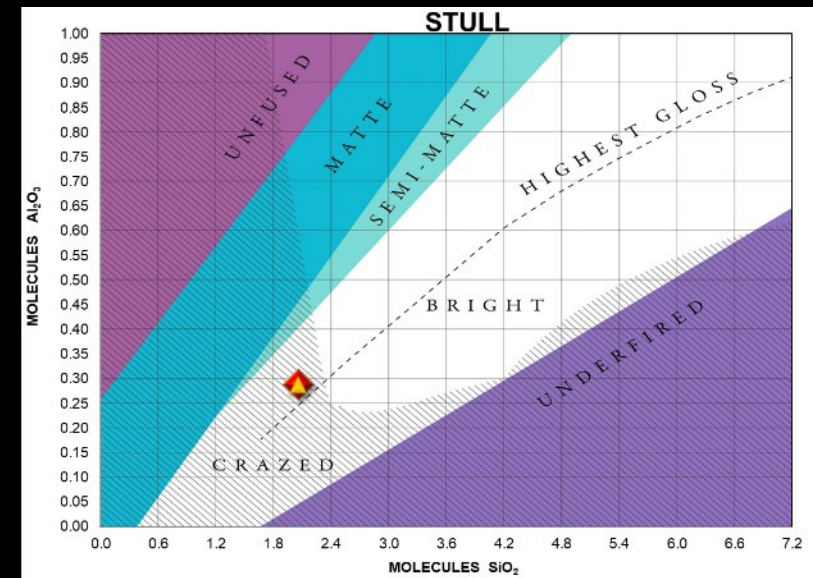
Tin Oxide

SiO ₂ :Al ₂ O ₃ Ratio 7.14 :1		Alkali Metals 0.26		Alkaline Earths 0.74	
SiO ₂ 2.16	Collective "Al ₂ O ₃ " 0.30	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.36
B ₂ O ₃	Al ₂ O ₃ 0.30	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂ 0.05	ZnO 0.37	FeO 0.00
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO

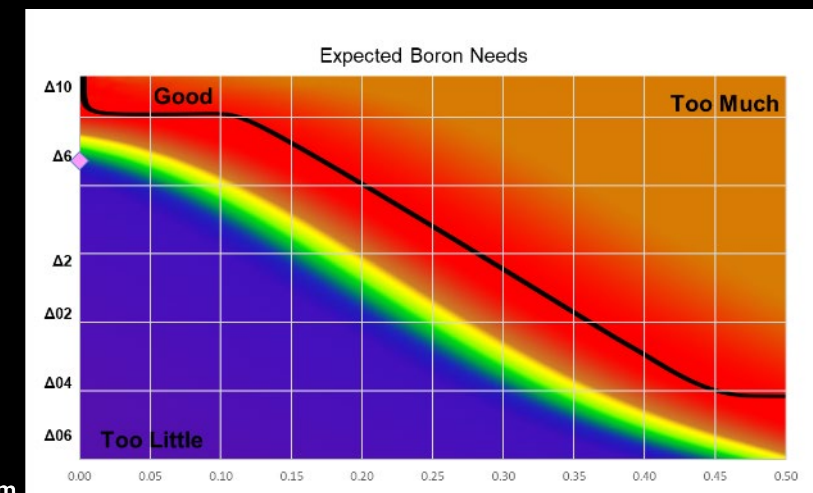
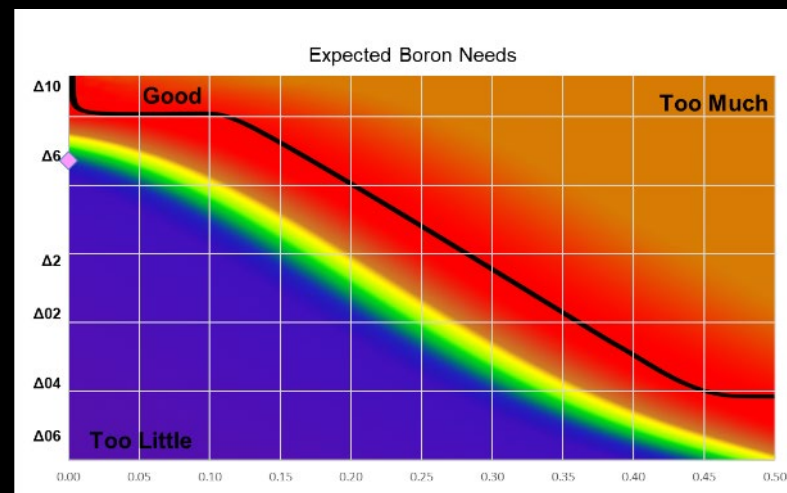


3%

SiO ₂ :Al ₂ O ₃ Ratio 7.14 :1		Alkali Metals 0.30		Alkaline Earths 0.70	
SiO ₂ 2.06	Collective "Al ₂ O ₃ " 0.29	Na ₂ O 0.16	K ₂ O 0.04	MgO 0.00	CaO 0.34
B ₂ O ₃	Al ₂ O ₃ 0.29	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂ 0.09	ZnO 0.36	FeO 0.00
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



6%



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Zirconium Silicate

Oxidation

Reduction

5%



1-3 Second Dip



2-3 Second Dips



1-3 Second Dip



2-3 Second Dips

10%



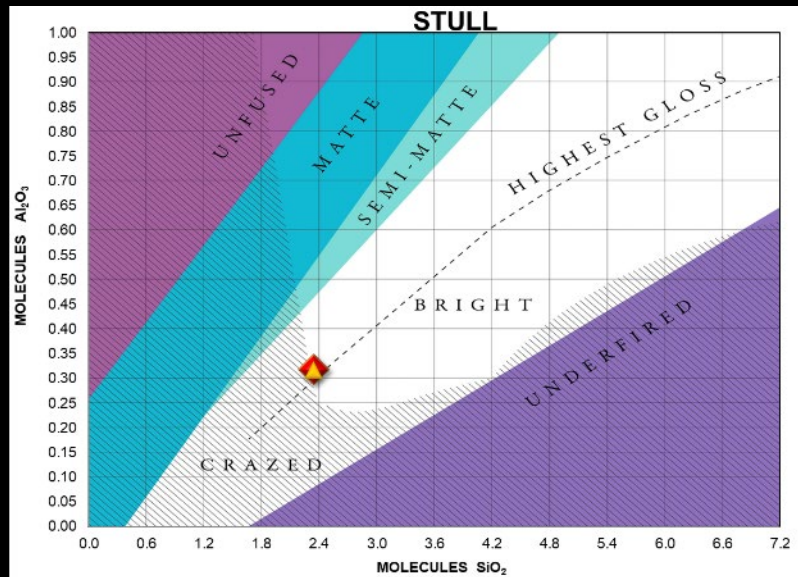
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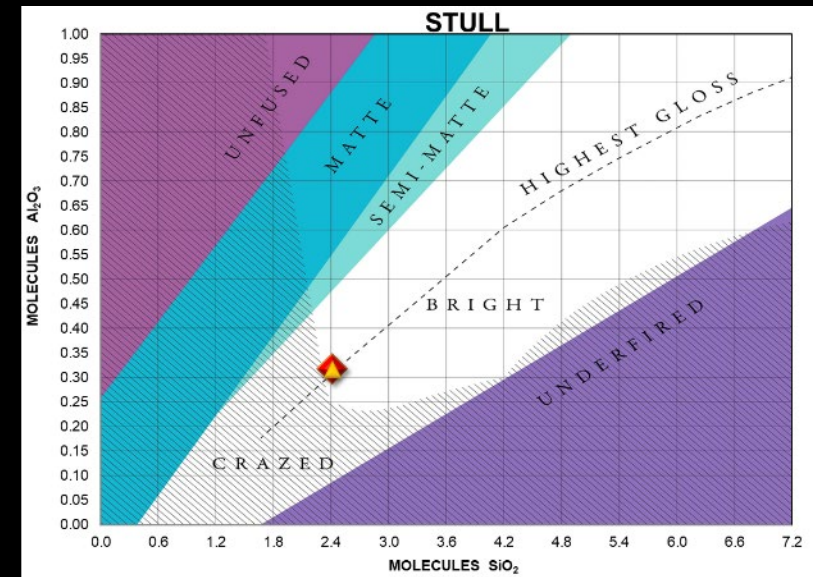
Zirconium Silicate

SiO ₂ :Al ₂ O ₃ Ratio 7.36 :1		Alkali Metals 0.22		Alkaline Earths 0.78	
SiO ₂ 2.34	Collective "Al ₂ O ₃ " 0.32	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.37
B ₂ O ₃	Al ₂ O ₃ 0.32	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.39	FeO 0.01
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



5%

SiO ₂ :Al ₂ O ₃ Ratio 7.58 :1		Alkali Metals 0.22		Alkaline Earths 0.78	
SiO ₂ 2.41	Collective "Al ₂ O ₃ " 0.32	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.37
B ₂ O ₃	Al ₂ O ₃ 0.32	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.39	FeO 0.01
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



10%



Stain Dark Red 6021

Oxidation

Reduction

5%



1-3 Second Dip

2-3 Second Dips

1-3 Second Dip

2-3 Second Dips

10%



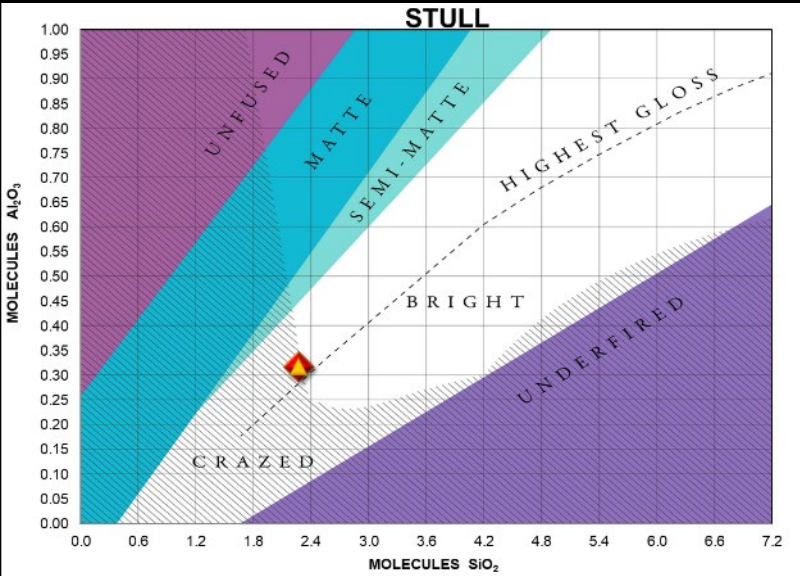
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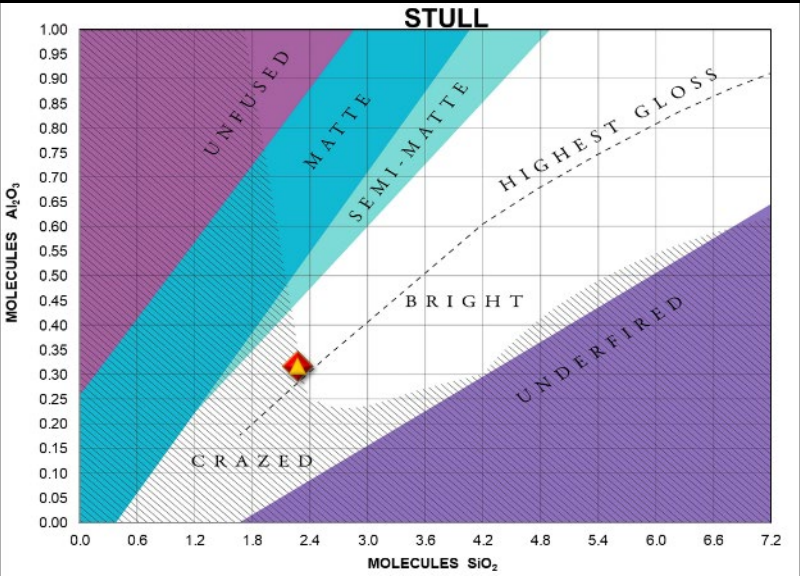
Stain Dark Red 6021

SiO ₂ :Al ₂ O ₃ Ratio 7.14 :1		Alkali Metals 0.22		Alkaline Earths 0.78	
SiO ₂ 2.27	Collective "Al ₂ O ₃ " 0.32	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.37
B ₂ O ₃	Al ₂ O ₃ 0.32	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.39	FeO 0.01
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO

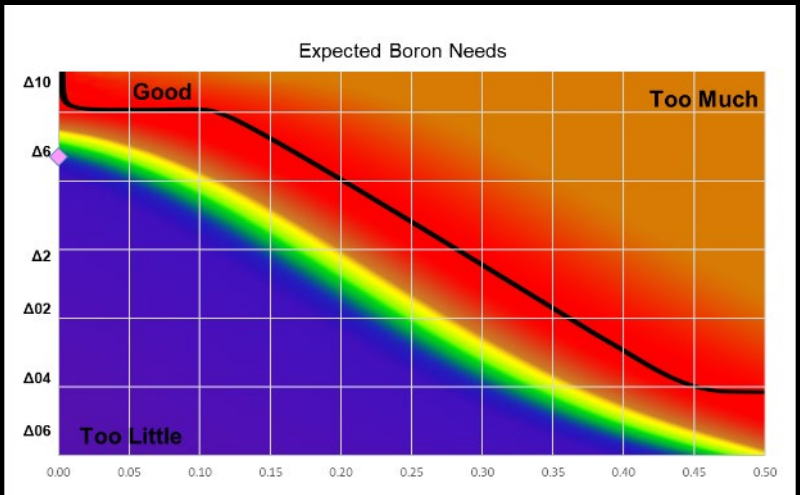


5%

SiO ₂ :Al ₂ O ₃ Ratio 7.14 :1		Alkali Metals 0.22		Alkaline Earths 0.78	
SiO ₂ 2.27	Collective "Al ₂ O ₃ " 0.32	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.37
B ₂ O ₃	Al ₂ O ₃ 0.32	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.39	FeO 0.01
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



10%



Ceramic
Materials
Workshop

Silicon Carbide-30 Mesh

Oxidation

Reduction

3%



1-3 Second Dip



2-3 Second Dips



1-3 Second Dip



2-3 Second Dips

9%



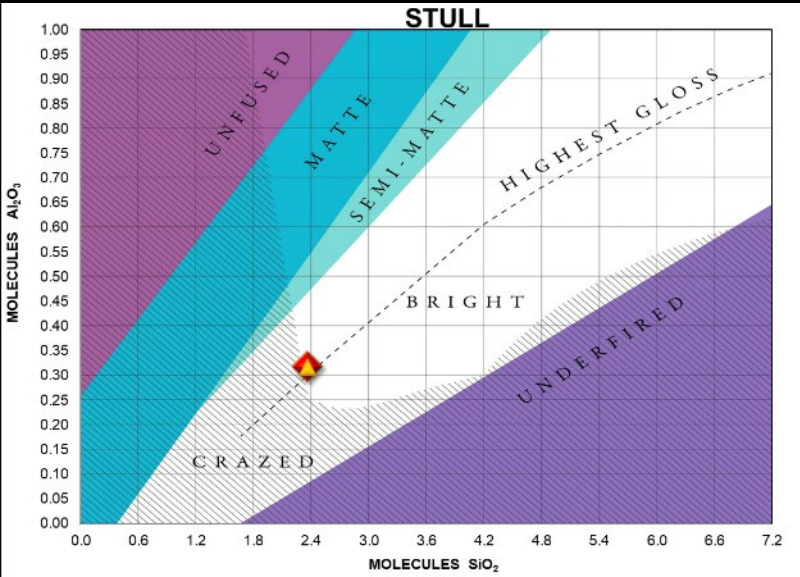
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Workshop

Heart of Glass – 070922

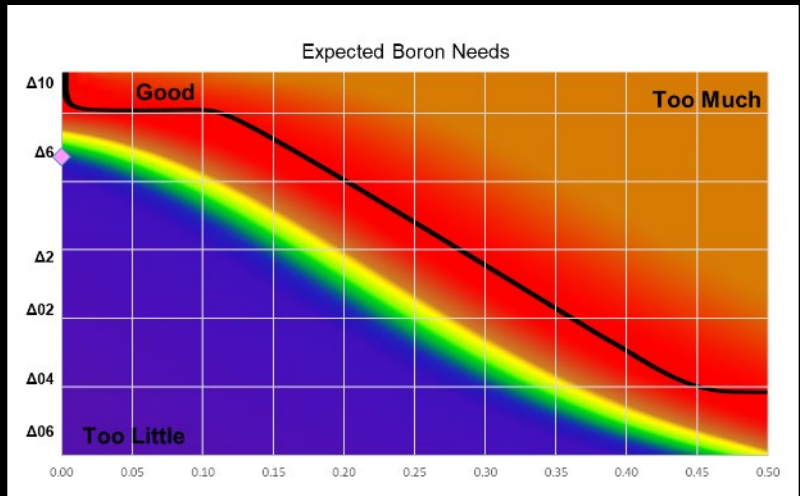
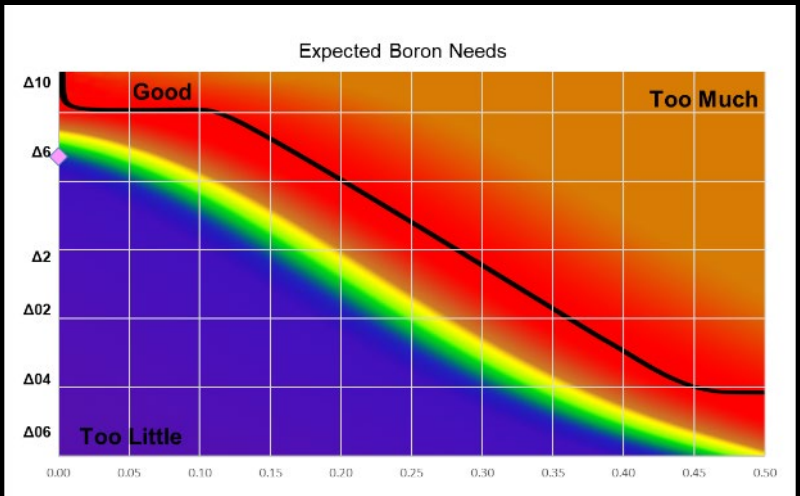
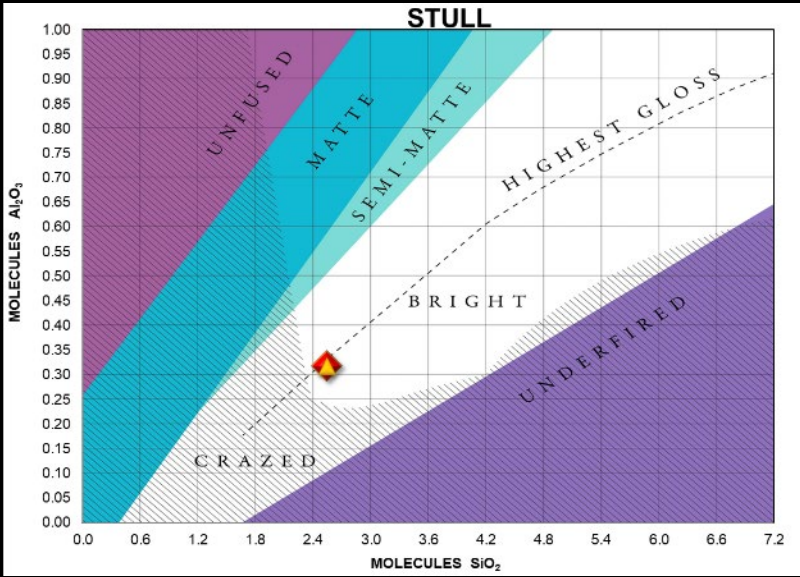
ceramicmaterialsworkshop.com

Silicon Carbide-30 Mesh

SiO ₂ :Al ₂ O ₃ Ratio 7.42 :1		Alkali Metals 0.22		Alkaline Earths 0.78	
SiO ₂ 2.36	Collective "Al ₂ O ₃ " 0.32	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.37
B ₂ O ₃	Al ₂ O ₃ 0.32	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.39	FeO 0.01
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



SiO ₂ :Al ₂ O ₃ Ratio 7.99 :1		Alkali Metals 0.22		Alkaline Earths 0.78	
SiO ₂ 2.54	Collective "Al ₂ O ₃ " 0.32	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.37
B ₂ O ₃	Al ₂ O ₃ 0.32	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.39	FeO 0.01
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



Silicon Carbide-800 Mesh

Oxidation

Reduction

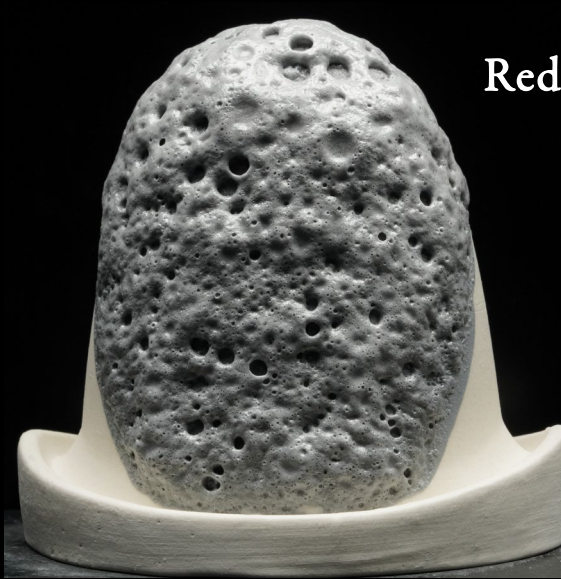
3%



1-3 Second Dip



2-3 Second Dips



1-3 Second Dip



2-3 Second Dips

9%



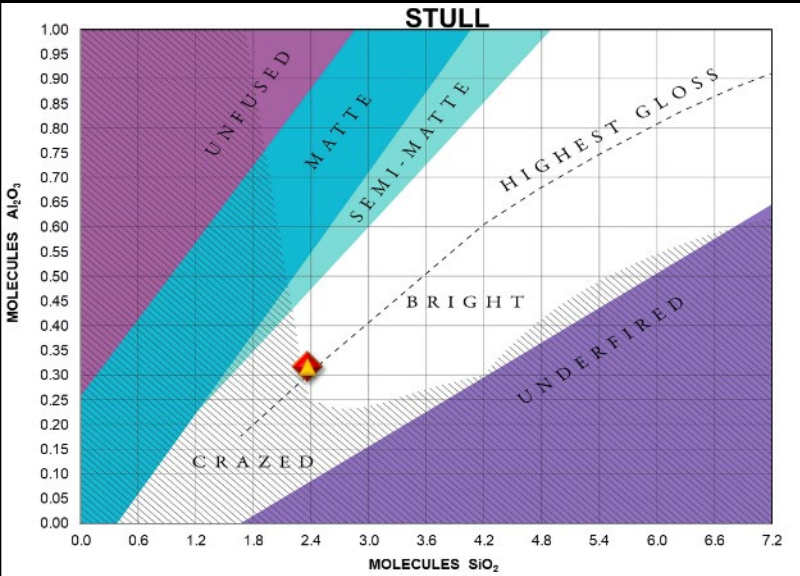
Ceramic
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Workshop

Heart of Glass – 070922

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Silicon Carbide-800 Mesh

SiO ₂ :Al ₂ O ₃ Ratio 7.42 :1		Alkali Metals 0.22		Alkaline Earths 0.78	
SiO ₂ 2.36	Collective "Al ₂ O ₃ " 0.32	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.37
B ₂ O ₃	Al ₂ O ₃ 0.32	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.39	FeO 0.01
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO



SiO ₂ :Al ₂ O ₃ Ratio 7.99 :1		Alkali Metals 0.22		Alkaline Earths 0.78	
SiO ₂ 2.54	Collective "Al ₂ O ₃ " 0.32	Na ₂ O 0.17	K ₂ O 0.05	MgO 0.00	CaO 0.37
B ₂ O ₃	Al ₂ O ₃ 0.32	Li ₂ O	CuO	SrO	BaO
TiO ₂ 0.00	NiO	Bi ₂ O ₃	SnO ₂	ZnO 0.39	FeO 0.01
Cr ₂ O ₃	ZrO ₂	P ₂ O ₅		MnO ₂	CoO

