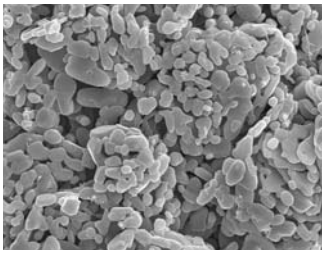
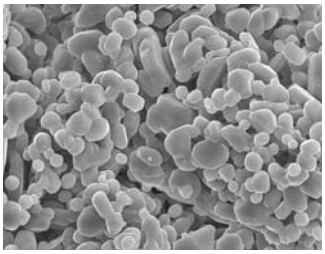
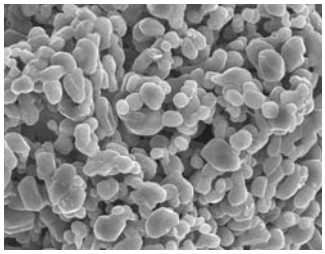
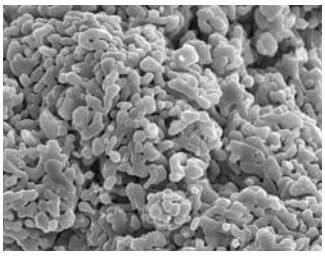
Low Soda Alumina

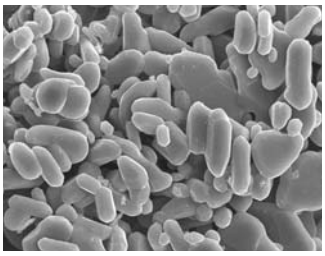
Low soda alumina features excellent chemical stability, electric insulation, heat resistance, thermal conductivity, hardness and mechanical strength. It is widely used in electronic devices,spark plugs and mechanical parts as well as engineering ceramics. We make sure that the sintering characteristics such as firing shrinkage are controlled to meet individual applications.

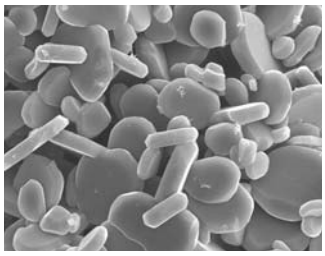

LS-11 10μm


LS-12 10μm


LS-13 10μm


LS-20 10μm


LS-22 10μm


LS-21 10μm

Typical Properties (Unmilled)

Grade	SLS-13	LS-11	LS-12	LS-13	LS-20	LS-22	LS-21
LOI (%)	0.02	0.02	0.02	0.02	0.02	0.01	0.01
Na_2O (%)	0.04	0.05	0.03	0.03	0.08	0.07	0.07
SiO_2 (%)	0.07	0.07	0.07	0.06	0.02	0.02	0.02
Fe_2O_3 (%)	0.03	0.03	0.03	0.03	0.02	0.02	0.02
Al_2O_3 (%)	99.9	99.8	99.9	99.9	99.9	99.9	99.9
Ave. Particle Size (μm)	105	55	55	55	20～40	20～40	20～40
α-Crystal Size (μm)	—	1～2	1～3	2～4	2～3	2～3	3～5
BET Specific Surface Area (m^2/g)	—	1.5	1.2	0.9	1.5	1.1	0.6
Green Density (g/cm^3)*	—	2.03	2.10	2.12	2.04	2.10	2.26
Fired Density (g/cm^3)*	—	3.79	3.80	3.78	3.81	3.81	3.78
Linear Shinkage (%)*	—	19.2	18.7	17.7	19.0	18.0	15.9

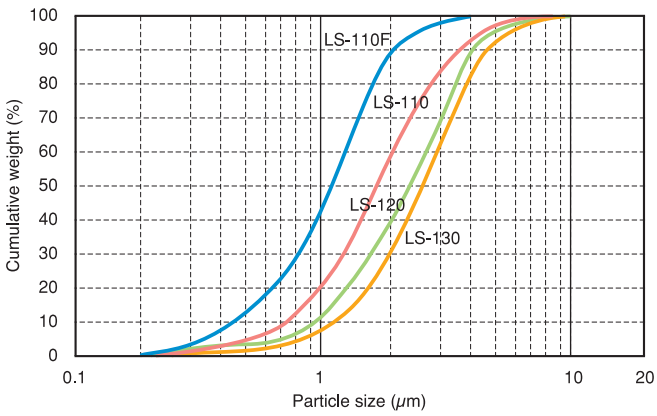
*LS-11, LS-12 and LS-13: with 4% flux after grinding. Pressed at 49.03MPa{500kgf/cm^2}, Fired at 1590°C for 3hrs
*LS-20, LS-21 and LS-22: with 4% flux after grinding. Pressed at 49.03MPa{500kgf/cm^2}, Fired at 1640°C for 3hrs

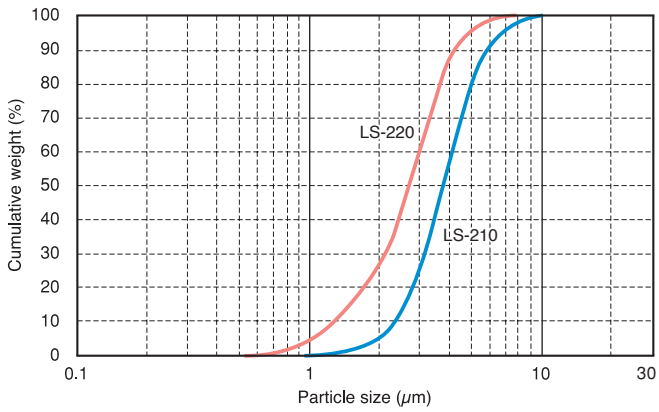
Typical Properties (Milled)

Grade	LS-110	LS-120	LS-130	LS-110F	LS-220	LS-210
LOI (%)	0.02	0.02	0.05	0.08	0.03	0.01
Na_2O (%)	0.05	0.04	0.03	0.05	0.07	0.08
SiO_2 (%)	0.07	0.07	0.07	0.09	0.02	0.02
Fe_2O_3 (%)	0.03	0.03	0.03	0.03	0.02	0.02
Al_2O_3 (%)	99.9	99.9	99.9	99.9	99.9	99.9
Ave. Particle Size (μm)	1.7	2.1	2.2	1.1	2.7	2.9
α-Crystal Size (μm)	1~2	1~3	2~4	1~2	2~3	3~5
BET Specific Surface Area (m^2/g)	1.9	1.4	1.4	3.2	1.6	0.9
Bulk Density (Pressed) (g/cm^3)*	2.22	2.27	2.31	2.29	2.22	2.32
Green Density (g/cm^3)**	2.13	2.20	2.23	2.33	2.17	2.30
Fired Density (g/cm^3)**	3.78	3.79	3.78	3.89	3.81	3.77
Linear Shinkage (%)	18.0	17.2	16.7	15.7	17.5	15.3

*Pressed at 98.07MPa{1000kgf/cm²} **With 4% flux, Pressed at 49.03MPa {5000kgf/cm²}, Fired at 1640°C for 3hrs

Particle Size Distribution



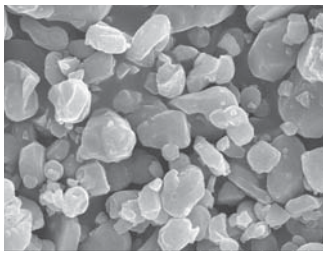


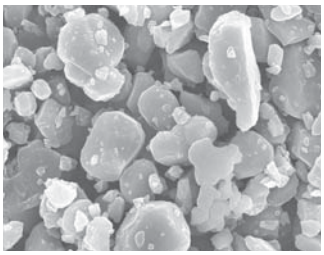
Applications

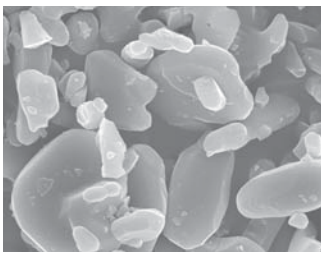
(1) Spark plug
(2) Electronic parts (IC substrates, capacitors)
(3) Engineering ceramics for semiconductor manufacturing equipment
(4) Laboratory apparatus
(5) Mechanical parts
(6) Special refractories
(7) Catalyst carriers

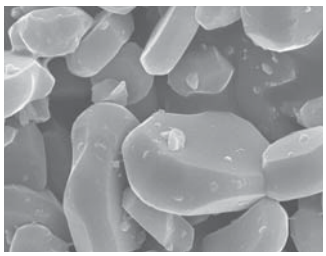
Packing

Flexible container bag (500kg and 1000kg)
Paper bag (25kg)


LS-110 5μm


LS-120 5μm

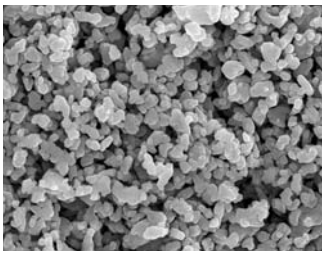

LS-220 5μm

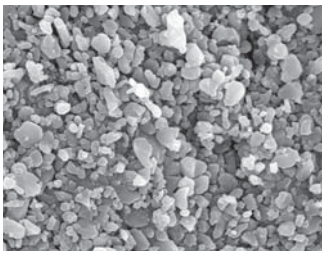

LS-210 5μm

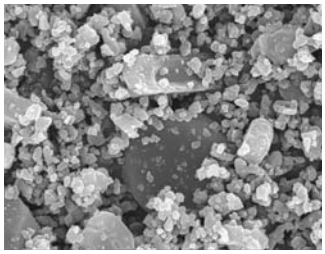
Reactive Alumina
Low Shrinkage Alumina

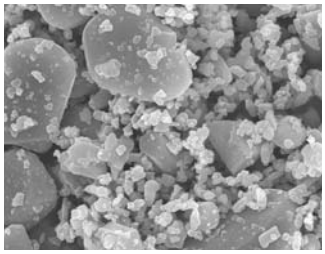
Our reactive aluminas can be easily sintered to high density at lower temperature and are suitable for fine ceramics requiring high mechanical strength and good surface finish.

An alumina with high green density provides low shrinkage after firing and is suitable for large shape ceramics.


LS-235C 5μm


LS-711 5μm


LS-242 5μm

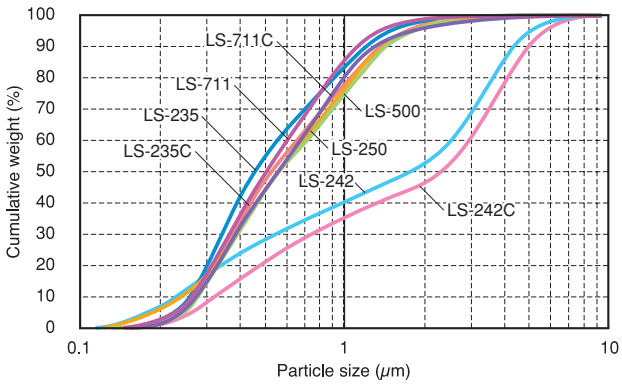

LS-242C 5μm

Typical Properties

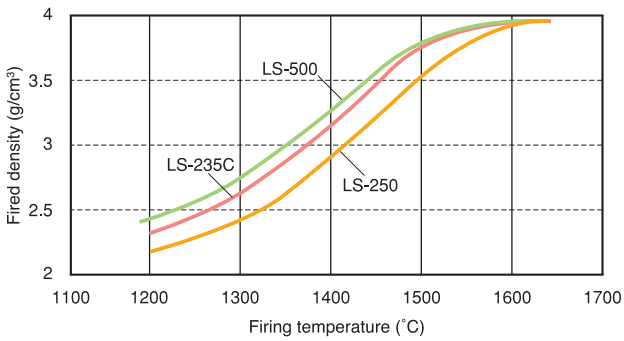
Grade	LS-235	LS-235C	LS-711	LS-711C	LS-500	LS-250	LS-242	LS-242C
LOI (%)	0.40	0.24	0.40	0.32	0.30	0.20	0.09	0.06
Na_2O (%)	0.07	0.07	0.07	0.07	0.05	0.06	0.07	0.07
SiO_2 (%)	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03
Fe_2O_3 (%)	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.03
MgO (%)	0.06	0.06	0.05	0.05	0.06	—	0.04	0.02
Al_2O_3 (%)	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
Ave. Particle Size (μm)	0.5	0.5	0.5	0.6	0.6	0.6	1.8	2.3
α-Crystal Size (μm)	0.3	0.3	0.5	0.5	0.3	0.3	0.3~4.0	0.3~4.0
BET Specific Surface Area (m^2/g)	7.0	6.4	6.5	5.9	6.8	5.9	6.5	4.6
Green Density (g/cm^3)	2.13	2.12	2.17	2.15	2.12	2.10	2.58	2.61
Fired Density (g/cm^3)	3.92	3.92	3.94	3.94	3.92	3.85	3.79	3.77
Linear Shinkage (%)	18.5	18.6	18.3	18.4	19.0	17.1	12.6	11.8

* Pressed at 34.32MPa {350kgf/cm²}, Fired at 1600°C for 3hrs without flux
LS-242 &LS-242C: Pressed at 98.07MPa {1000kgf/cm²}, Fired at 1700°C for 2hrs without flux

Particle Size Distribution



Sintering Properties



Application

(1) Mechanical parts
(2) Special refractories

Packing

Flexible container bag (500kg and 1000kg)
Paper bag (25kg)