
New type of modified sodium silicate and curing agent (green casting binder)

This product is the new generation of a new type of modified sodium silicate and modified sodium silicate curing agent for casting, which is jointly developed by our company and domestic universities and colleges.

Features of new modified sodium silicate:

1. To solve the problem of used sand recovery: the recovery rate can reach more than 90%, and to solve the problems of environmental protection and waste caused by emitting of used sand;
2. To solve the problem of cleaning sand: the collapsibility of molding sand at middle and low temperature is better than that of resin sand;
3. To solve environmental protection problems: non-toxic, tasteless, no organic gas emission, no solid waste emission (except dust), no pollution to the environment;
4. To solve the problem of moisture absorption: high collapsibility water-glass has the property of moisture resistance, which can avoid the defects of sand model and casting parts caused by the moisture absorption of molding sand;
5. To solve the production efficiency problem: the fast sodium silicate has a fast producing capacity, which is nearly 50% higher than the traditional modified sodium silicate.
6. To solve the production cost problem: to reduce the customer's molding sand cost by another 20-50%.

This product is applicable to all kinds of carbon steel, ductile iron, alloy steel, high manganese steel, aluminum alloy and various non-ferrous metals. Casting covers metallurgy, mining, railway, automobile, military, engineering machinery, heavy industry, pump valve and multiple industries.



Index of New Modified Sodium Silicate:

The new modified sodium silicate is divided into : - general modified sodium silicate , modified sodium silicate with high collapsibility and anti-moisture function and sodium silicate with fast hardening rate.

1.General modified sodium silicate

Type	Viscosity (mpa.s)	Density (g/cm ³)	Rate of hardening	Modifier content
TGX-900 TGX-901	>50	1.4-1.6	slow speed	≥5%
TGX-902 TGX-903	>50	1.4-1.6	medium speed	≥5%
TGX-904 TGX-905	>50	1.4-1.6	high speed	≥5%

2. Modified Sodium Silicate With High Collapsibility and Anti-moisture Function

Type	Viscosity (mpa.s)	Density (g/cm ³)	Rate of hardening	Modifier content
TGX-900 TGX-901	>50	1.4-1.6	slow speed	≥10%
TGX-902 TGX-903	>50	1.4-1.6	medium speed	≥10%
TGX-904 TGX-905	>50	1.4-1.6	high speed	≥10%

Characteristics: Modified sodium silicate with high collapsibility and anti-moisture function can solve the problem of molding sand hygroscopic strength reduction in summer, while the collapsibility is close to resin sand.

3. Sodium Silicate With Fast Hardening Rate:

Type	Viscosity (mpa.s)	Density (g/cm ³)	Rate of hardening	Modifier content
TGX-900-KS TGX-901-KS	>50	1.4-1.6	slow speed	≥10%
TGX-902-KS TGX-903-KS	>50	1.4-1.6	medium speed	≥10%
TGX-904-KS TGX-905-KS	>50	1.4-1.6	high speed	≥10%

Characteristic: Its hardening strength speed is increased by 50 % at the earlier stage compared with the general modified sodium silicate and the production efficiency is significantly improved.

Note: the content of the modifier is the same, but the composition is different, which determines the general modified sodium silicate and modified sodium silicate with high collapsibility and anti-moisture function



Workshop



New type of modified sodium silicate



Curing Agent and Its Appropriate Blending Index

Model	Rate of hardening	Applicable temperature	Stripping time (25°C)	Viscosity of curing agent (mpa.s)	Density of curing agent (g/cm ³)
L-01	high speed	<10°C	20 minutes	<150	1.1-1.3
L-04	medium speed	10°C-35°C	50 minutes	<150	1.1-1.3
L-07	medium speed	10°C-35°C	90 minutes	<150	1.1-1.3
L-10	Slow speed	>35°C	120 minutes	<150	1.1-1.3

Note: we can produce special type of sodium silicate water glass and curing agent according to the reclaimed condition of the clients' reclaimed sand and the customer's requirements on the applicable time of the molding sand, so as to meet the requirements of customer production



Workshop



Curing Agent



Method of usage:

Process formula:

The original sand: 100%

Sodium silicate: small and medium parts 2.2-2.6%; Medium and large parts 2.4-3.0% (proportion of sand weight)

Curing agent: 15-18% (proportion of sodium silicate weight)

Sand mixing process:

Continuous sand mixer: sand mixing according to equipment requirements

Batch-type/grinding wheel sand mixer: first add curing agent to mix sand for 1-2 minutes, then add Sodium silicate to mix sand for 1-2 minutes, take it out after mix evenly.

Speed regulation:

It is convenient to adjust curing speed and demoulding time by changing the curing agent model or mixing with different curing agent models.



Comparison of Sodium Silicate moisture resistance

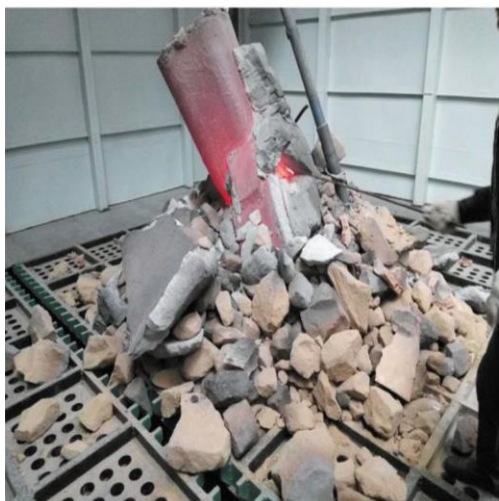


Sodium Silicate Sand With High Collapsibility and Anti- moisture Function



General modified Sodium Silicate sand

Example of High Collapsibility of Sodium Silicate



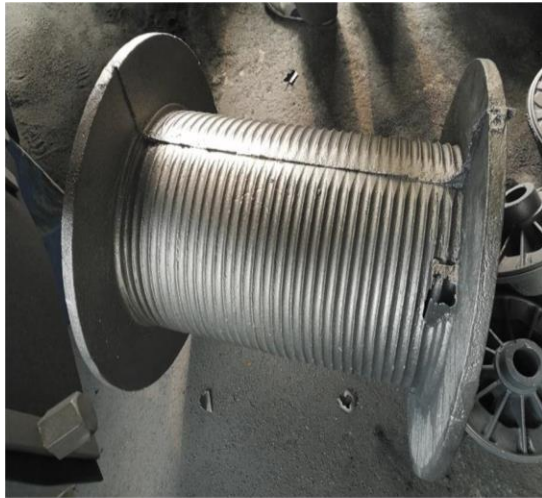
Application in carbon steel, alloy steel, stainless steel and other fields



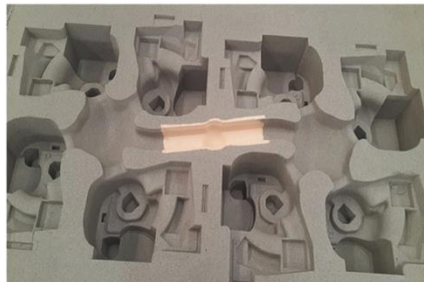
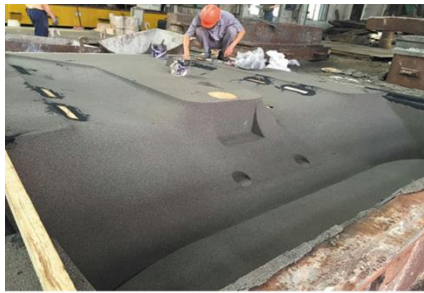
Application in high manganese steel field



Application in the field of cast iron



Example of sodium silicate modeling



Example of sodium silicate core making

