Caustic Soda Solution (NaOH 50%)

Sodium Hydroxide Solution

Brief Description

Caustic Soda Solution is a clear, colorless, odorless and slightly viscous liquid. It is miscible with water at any ratio. Caustic Soda Solution reacts strongly alkaline and is highly corrosive to various materials.

Raw Material Properties	Typical Value *	Unit	Test method DIN
Sodium Hydroxide (NaOH)	50	%	
Molecular Mass	40	g/Mol	
Density at 20°C	1,5	g/cm ^{3}	51757
Dynamic Viscosity at 20°C	Approximately 79	mPas	51562
Freezing Point	Approximately 12	°C	

* The values given above are **typical** test results which should be used as a guide only. They do not form the whole or part of a specification or guarantee.

Processing and Applications

Caustic Soda Solution is a strongly alkaline product, which is applied as a chemical reactant or neutralization agent in various areas,
e.g. in chemical, pharmaceutical, textile, pulp and paper, metal and food industries, for agriculture, soap and detergent manufacturing or waste water treatment.

Caustic Soda Solution reacts strongly alkaline and is highly corrosive and aggressive to various materials such as aluminum, magnesium, zinc, glass, emaille and many plastic products.

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Packaging, Delivery and Storage

Caustic Soda Solution is transported via railcar, road tanker or barge.

Store above 25°C and in the absence of air when stored for long periods.

In the presence of air, sodium carbonate is formed by the uptake of carbon dioxide, which can result in turbidity of the caustic solution.

In order to prevent carbonate formation, the containers can be sealed off from air, for example, but pressure equalization must be made possible during transfer operations. If possible, the storage tanks for caustic soda should be heatable to prevent crystallization during the cold season.
Caustic Soda Solution 50% already begins to solidify at approx. 10-12°C.

When stored properly under the conditions recommended, Caustic Soda Solution has a virtually unlimited shelf life.

Food Compliance

Caustic Soda Solution 50% fulfils the criteria of purity for food additives according to Zusatzstoff- Zulassungsverordnung (ZZulV), Zusatzstoff- Verkehrsverordnung (ZVerkV), Food Chemicals Codex (FCC) and of products for water treatment concerning to human applications referred to DIN EN 896.

Caustic Soda Solution is registered within the EU as a food additive E 524.

When diluting the Caustic Soda Solution, strict attention must be paid to avoiding the introduction of microbes. (Use clean, ideally disinfected containers / dilute with clean, germ-free water / store for as short a time as possible in cool conditions.

General Information

Safety data, transport information and toxicological data are provided in the current EU safety data sheet.

Some applications for this product may be subject to national and/or international standards (food additives, waste water treatment, in the pharmaceutical industry,...). The customer alone is responsible for complying with all existing patents and regulations applicable to our products and its applications.

We assume that our Caustic Soda Solution is free of organic impurities. Our Caustic Soda Solution is produced using a purely inorganic process. The production process runs in a completely closed system from brine preparation onwards.

Furthermore, the rail tank cars used by Vinnolit as well as the ships in time charter are exclusively intended for the transport of Caustic Soda Solution. When transporting Caustic Soda Solution by tanker or in a rented ship, Vinnolit will request an appropriate cleaning certificate from the respective carrier before filling with Caustic Soda Solution. All possible traces in our Caustic Soda Solution and their max. concentration can be taken from our SLS.

For any inquiries, please do not hesitate to contact our sales team.

The data and recommendations contained in this product information represent the current state of our knowledge and serve as a guide only to our products and their potential applications. Therefore, no warranty of specific properties of the products mentioned herein nor of their suitability or fitness for a particular purpose is implied.
The information given in this leaflet should be checked by preliminary trials because of conditions during processing over which we have no control, especially where other companies' raw materials are also used.
Patent or other proprietary rights of third parties must be observed. The quality of our products is warranted under the terms of our General Conditions of Sale

Ismaning, 24. February 2021

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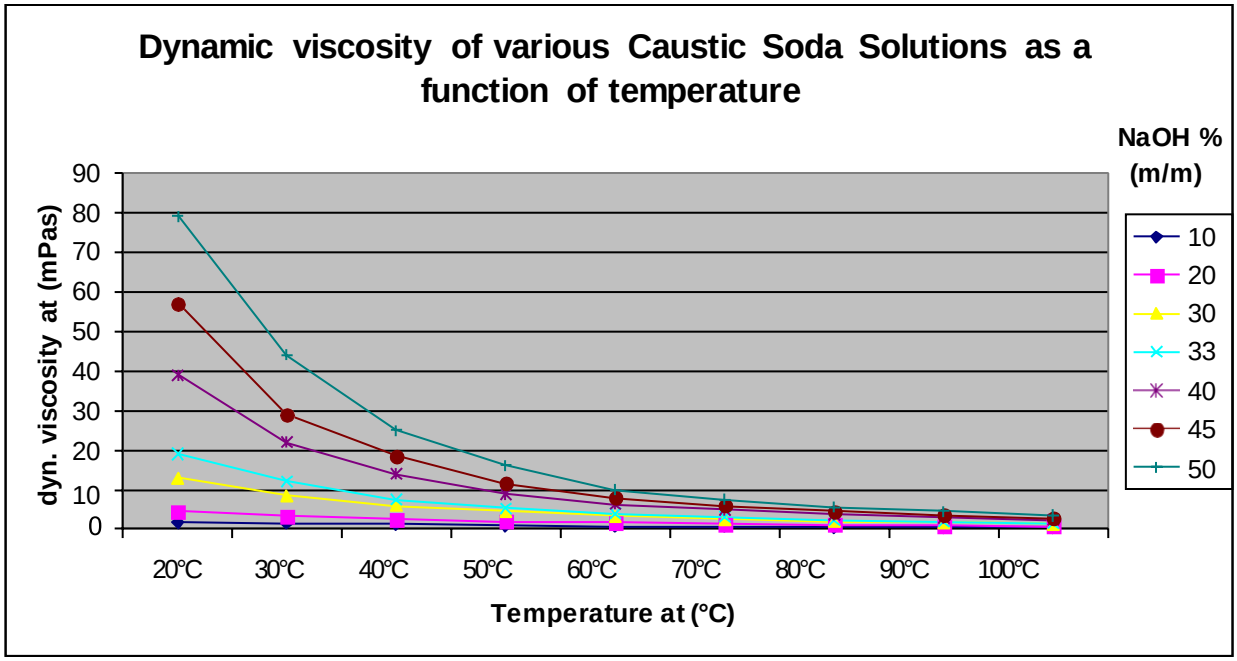
Dynamic viscosity of various Caustic Soda Solutions as a function of temperature [mPas]									
NaOH % (m/m)	20°C	30°C	40°C	50°C	60°C	70°C	80°C	90°C	100°C
10	1,7	1,45	1,2	0,95	0,78	0,66	0,55	0,47	0,40
20	4,5	3,2	2,5	1,9	1,6	1,3	1,1	0,85	0,7
30	13,0	8,5	6,0	4,5	3,3	2,5	2,0	1,6	1,3
33	19,0	12,0	7,5	5,4	3,9	3,1	2,4	1,9	1,5
40	39,0	22,0	14,0	9,0	6,4	4,8	3,7	2,9	2,4
45	57,0	29,0	18,5	11,5	7,9	5,9	4,5	3,5	2,8
50	79,0	44,0	25,0	16,0	10,0	7,5	5,5	4,4	3,4



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Density of various Caustic Soda Solutions as a function of temperature

NaOH %(m/m)	0°C	10°C	20°C	30°C	40°C	50°C	60°C	70°C	80°C	90°C	100°C
2	1,024	1,023	1,021	1,018	1,014	1,010	1,005	0,999	0,993	0,987	0,980
4	1,048	1,046	1,043	1,039	1,035	1,031	1,026	1,020	1,014	1,008	1,001
6	1,071	1,068	1,065	1,061	1,056	1,052	1,047	1,041	1,035	1,028	1,022
8	1,094	1,091	1,087	1,083	1,078	1,073	1,068	1,062	1,056	1,050	1,043
10	1,117	1,113	1,109	1,104	1,100	1,094	1,089	1,083	1,077	1,071	1,064
12	1,140	1,136	1,131	1,126	1,121	1,116	1,110	1,104	1,098	1,092	1,086
14	1,162	1,158	1,153	1,148	1,143	1,137	1,132	1,126	1,120	1,113	1,107
16	1,185	1,180	1,175	1,170	1,165	1,159	1,153	1,147	1,141	1,134	1,128
18	1,207	1,202	1,197	1,192	1,186	1,181	1,175	1,169	1,162	1,156	1,149
20	1,230	1,224	1,219	1,214	1,208	1,202	1,196	1,190	1,183	1,177	1,170
22	1,252	1,247	1,241	1,235	1,230	1,224	1,218	1,211	1,205	1,198	1,191
24	1,274	1,269	1,263	1,257	1,251	1,245	1,239	1,232	1,226	1,219	1,212
26	1,296	1,291	1,285	1,279	1,273	1,267	1,261	1,254	1,247	1,241	1,234
28	1,318	1,312	1,306	1,300	1,294	1,288	1,281	1,275	1,268	1,262	1,255
30		1,334	1,328	1,322	1,315	1,309	1,302	1,296	1,289	1,282	1,276
32		1,355	1,349	1,343	1,336	1,330	1,324	1,317	1,310	1,303	1,296
34			1,370	1,363	1,357	1,350	1,343	1,337	1,330	1,323	1,316
36			1,390	1,384	1,377	1,370	1,363	1,357	1,350	1,343	1,336
38			1,410	1,404	1,397	1,390	1,383	1,376	1,370	1,363	1,356
40			1,430	1,423	1,416	1,410	1,403	1,396	1,389	1,382	1,375
42			1,449	1,443	1,436	1,429	1,422	1,415	1,408	1,401	1,394
44			1,468	1,462	1,455	1,448	1,441	1,434	1,427	1,420	1,413
46			1,487	1,481	1,473	1,466	1,459	1,452	1,445	1,438	1,432
48			1,506	1,500	1,492	1,485	1,478	1,471	1,464	1,457	1,450
50			1,525	1,518	1,511	1,504	1,497	1,490	1,483	1,476	1,470
52				1,534	1,530	1,524	1,517	1,510	1,503	1,496	1,490
54					1,549	1,543	1,536	1,530	1,523	1,516	1,510
56					1,568	1,562	1,556	1,550	1,543	1,536	1,530
58						1,581	1,576	1,570	1,563	1,556	1,550
60								1,590	1,583	1,576	1,570

Values of solutions below 50% (w/w) taken from „Int. Crit. Tables", 3rd edition, page 79; values of solutions above 50% (w/w) were determined by extrapolation.

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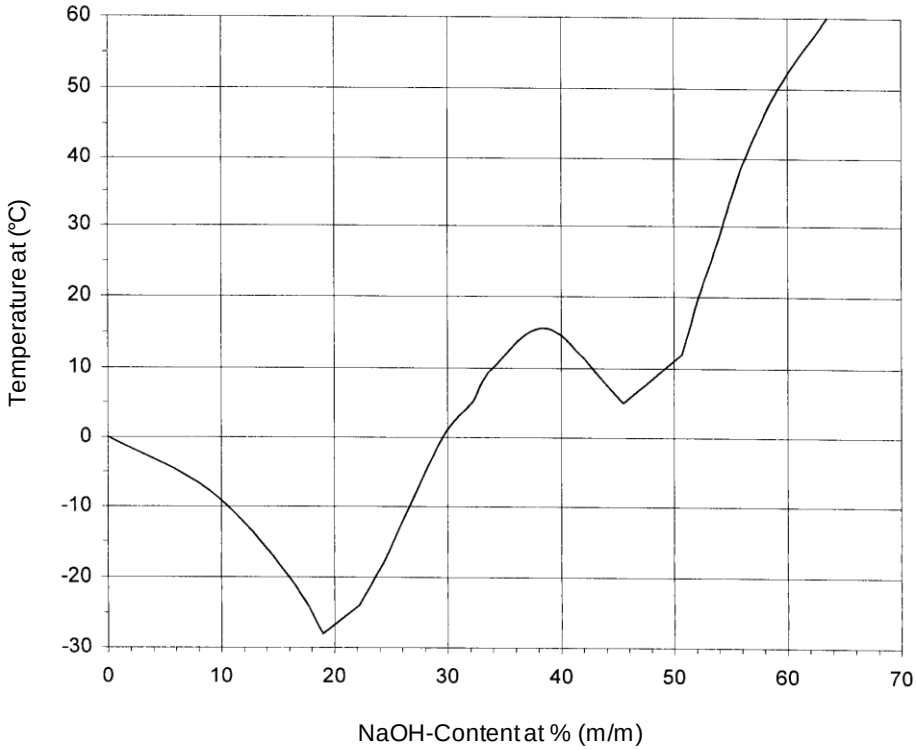
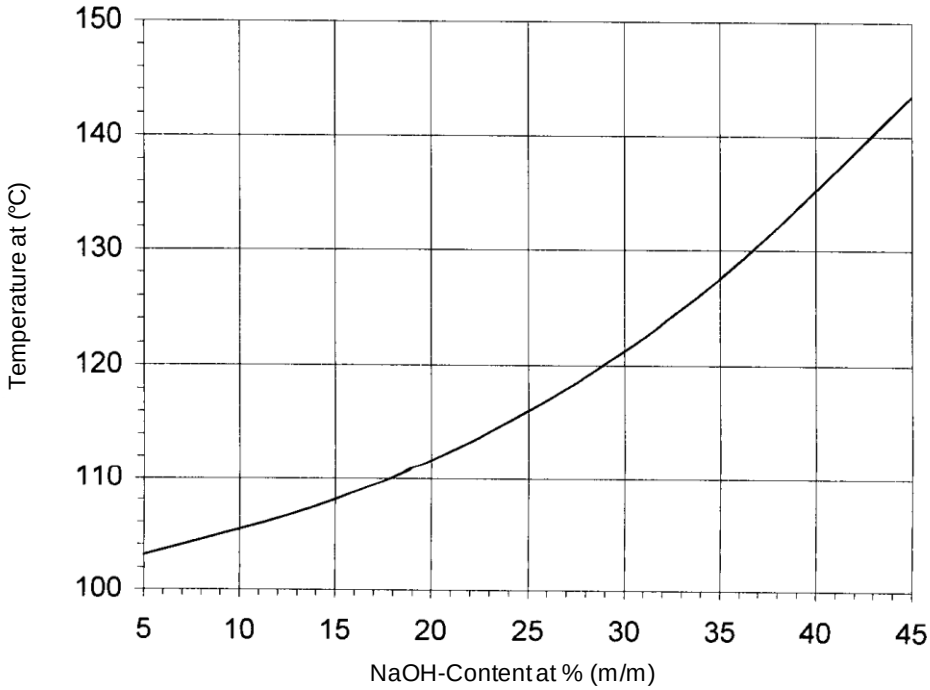
Freezing points of Caustic Soda Solutions at various concentrations.



Boiling points of Caustic Soda Solutions at various concentrations.



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