



**Ranhill
SAJ**

**SPECIFICATION FOR SODIUM HYPOCHLORITE
USED FOR POTABLE SUPPLY**

**SPECIFICATION SAJ CH/SH/001
(Rev.3.0 / 12.2018)**

**Ranhill
SAJ**

QUALITY ASSURANCE DEPARTMENT
RANHILL SAJ SDN. BHD

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Specification for Sodium Hypochlorite Used For Potable Water Supply

1.0 GENERAL

- 1.1) This specification is applicable to Sodium Hypochlorite Used For Potable Water Supply accordingly to Spesifikasi JKR 20200-0138-02, JKR Standard Specification For Sodium Hypochlorite Used For Potable Water Supply.
- 1.2) Features required for this specification are as follows or otherwise the above specification will be applied.

2.0 FEATURES REQUIRED

- 2.1) Sodium Hypochlorite Used for Potable Water Supply shall comply with requirement as specified in Table 1 – Product Specification.

Table 1 – Product Specification

Parameter		
A. Chemical Requirement	Type I	Test Method
Available chlorine, % (w/w), at the time of delivery	8-16	AWWA B300-99 EN901: 2000
B. Impurities		
Insoluble matter, %(w/w)	0.15 max	AWWA B300-99
Total free alkali, as NaOH, %(w/w)	1.5 max	AWWA B300-99
Sodium Chlorite, as NaClO ₃ , %(w/w of product available chlorine at the time of delivery)	5.4 max	EN901: 2000
C. Toxic Substances	Max Limit	
Arsenic (As), as mg/kg of available chlorine	5	EN901: 2000
Cadmium (Cd), as mg/kg of available chlorine	5	EN901: 2000
Chromium (Cr), as mg/kg of available chlorine	5	EN901 & ISO9174
Mercury (Hg), as mg/kg of available chlorine	5	EN901 & ISO5666-1
Nickel (Ni), as mg/kg of available chlorine	10	EN901: 2000
Lead (Pb), as mg/kg of available chlorine	15	EN901: 2000
Antimony (Sb), as mg/kg of available chlorine	25	EN901: 2000
Selenium (Se), as mg/kg of available chlorine	25	EN901: 2000

2.2) Physical Properties of Sodium Hypochlorite are as follows:

No.	Physical Properties	Descriptions
1.	Appearance	i. Clear ii. Light yellowish-green iii. Faint chlorinous odour
2.	Solubility	i. Soluble
3.	Density	i. 1.13 – 1.28g/ml at 20°C
4.	Vapour Pressure	i. 2.5kPa at 20°C
5.	Crystallization & Freezing Point	i. Freezing at -17°C ii. Crystallization between -20°C and -30°C
6.	Specific Heat	i. 3.84kJ/(kg. K) for a solution with an available active chlorine concentration of between 15-15% (w/w)
7.	Viscosity	i. 2.6mPa.s at 20°C
8.	Chemical Properties	i. An alkaline solution ii. pH value greater than 11 at 20°C iii. Reacts with acids and acidic salt to

2.3) Chloride content of 10-16% (w/w) of available chlorine.

2.4) Sodium Hypochlorite supplied shall not contain any impurities and additives.

3.0 TEST AND INSPECTION

3.1 All Sodium Hypochlorite shall comply with test in accordance with the requirement of specification.

4.0 PACKING AND STORAGE

4.1 Sodium Hypochlorite shall be delivered in plastic drum or tanker.

4.2 For storage purposes, Sodium Hypochlorite shall be protected against light, particularly direct sunlight, cool room in containers made from suitable plastics material or metal with internal rubber lined or plastic coated.

5.0 MANDATORY MARKING

Each bag of Sodium Hypochlorite shall have mark legibly on it including: -

- 5.1 “sodium hypochlorite”, trade name and grade/type;
- 5.2 Net weight;
- 5.3 Name, address and telephone number or supplier and/or manufacturer;
- 5.4 Batch number;
- 5.5 Date of manufacturing / packaging and shall bear such other marking as required by applicable laws;

6.0 TRANSPORTATION AND LABELLING

The product shall be categorised under the following transportation guideline and labelling ;

- | | | | |
|-----|----------|---|----------------------|
| 6.1 | RID | : | class 8, n°, 61c; |
| 6.2 | ADR | : | class 8; |
| 6.3 | IMO-IMDG | : | class 8, UN No 1791; |
| 6.4 | IATA | : | class 8, UN No 1791. |

7.0 PRE-DELIVERY INSPECTION AND EVALUATION

- 7.1 It is the responsibility of the tenderer to inform SAJ for inspection purposes during manufacturing and before delivery.
- 7.2 SAJ reserve the right to inspect and witness the testing of the product offered without any prior notice.
- 7.3 At any time, when requested, the supplier is to provide SAJ a sample of the product offered for evaluation purposes. All cost shall be borne by the supplier.
- 7.4 If at any time, the supplier fails to deliver the required sample, the product is deemed fail to meet the specification.

8.0 CERTIFICATION

- 8.1 Manufacturer and/or supplier of the product are required to provide the copy of the certificate and testing report from SIRIM, IKRAM and/or other certification bodies.
- 8.2 Tests report required should be those tests conducted within a year period.
- 8.3 SAJ has the right to refuse offer or reject supply if those documents required are not enclosed.