



# Ranhill SAJ

## SPECIFICATION FOR SODIUM FLUORIDE USED FOR POTABLE WATER SUPPLY

MATERIAL REQUIREMENTS

**SPECIFICATION SAJ CH/ SF/ 001**  
(REV 4.0/09.2018)

QUALITY ASSURANCE DEPARTMENT  
RANHILL SAJ SDN BHD

Ranhill

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## SPECIFICATION FOR SODIUM FLUORIDE USED FOR POTABLE WATER SUPPLY

### 1.0 General

- 1.1 This specification is applicable to Sodium Fluoride Used for Potable Water Supply accordingly to Malaysian Standard, MS 1573 : 2003 Specification for Sodium Fluoride 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 Fluoride used for potable water supply shall comply with requirement as specified in **Table 1-Product Specification.**

**Table 1 – Product Specification**

Parameter	Requirement	Test Method
<b>A. Chemical Requirements</b>		
	<b>Limit</b>	
Sodium Fluoride (dry basis), % (w/w)	97.0 min	<u>MS ISO 2833</u>
Moisture, % (w/w)	0.5 max	<u>MS ISO 2832</u>
<b>B. Impurities</b>		
Insoluble matter, % (w/w)	0.6 max	<u>MS ISO 2831</u>
<b>C. Physical Requirements</b>		
	<b>Requirement</b>	<b>Test Method</b>
Particle size, passing sieve 850 µm, % (w/w)	98% min	n. <u>a</u>
Particle size, passing sieve 150 µm, % (w/w)	50% min	
Particle size, passing sieve 45 µm, % (w/w)	5% max	
Bulk density, g/ml	0.6-1.4	<u>Appendix A</u>
<b>D. Toxic Substances</b>		
	<b>Limit mg/kg of Product</b>	<b>Test Method</b>
Arsenic, As	5	EN 12173:1998
Cadmium, Cd	0.1	MS ISO 6353-1
Chromium, Cr	4	MS ISO 6353-1
Mercury, Hg	0.1	MS ISO 5993
Lead, Pb	4	MS ISO 6353-1
Selenium, Se	1	EN 12173:1998
Nickel, Ni	4	MS ISO 6353-1
Antimony, Sb	1	EN 12173:1998

2.2 Physical Properties of Sodium Fluoride are as follows **Table 2 – Physical Properties.**

**Table 2 – Physical Properties**

No.	Physical Properties	Descriptions
1.	Appearance	i. Dry ii. Colourless iii. Coarse crystalline odourless powder iv. Crystals containing no lumps
2.	Solubility	i. <u>4.0g/100ml</u> water at ambient temperature
3.	Density	i. <u>2.8g/cm<sup>3</sup></u> at 20°C
4.	Boiling Point	i. <u>Approximately 1700°C at 100kPa (1 bar)</u>
5.	Crystallisation Point	i. <u>Approximately melts at 988°C</u>

2.3 Sodium Fluoride supplied shall not contain any impurities and additives.

2.4 The product shall have fluoride content of minimum of 97% (dry basis) of Sodium Fluoride, which corresponds to approximately 44% fluoride ions.

### 3.0 Test and Inspection

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

### 4.0 Packing and Storage

4.1 Sodium Fluoride shall be delivered in dilution tank, which shall be of acid-resistant.

4.2 For storage purposes, in Sodium Fluoride shall be store in cool-dry and well ventilated area and separated from acids, food and feedstuffs.

4.3 Avoid contact with strong mineral acids.

4.4 Product stable when stored in tightly closed or seal containers.

### 5.0 Mandatory Marking

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

- a) "Sodium Fluoride", trade name and grade/type
- b) Net weight
- c) Name, address and telephone number or supplier and/ or manufacturer
- d) Batch number
- e) Date of manufacturing/packaging and any other markings as required by applicable laws.

## 6.0 Certificate of analysis

6.1 A certificate of analysis, with the indication of country of origin should accompany all deliveries for the chemical and be given to SAJ's.

6.2 The contents of the certificate of analysis shall include the following:

- a) Sodium Fluoride, % (w/w)
- b) Moisture, % ( w/w)
- c) Passing sieve of 850 µm, % (w/w)
- d) Insoluble matters , % (w/w)

6.3 The contents of comprehensive certificate of analysis shall include the following:

- a) Sodium Fluoride, % (w/w)
- b) Moisture , % (w/w)
- c) Passing sieve of 850 µm, % (w/w)
- d) Insoluble matters , % (w/w)
- e) Toxic substances (Cr, Cd, Hg, Pb, As, Ni, Se, Sb), mg/kg of product.

## 7.0 Transportation and Labeling

The product shall be categorized under the following transportation guideline and labeling;

- |     |          |   |
|-----|----------|---|
| 7.1 | RID      | : Class 6.1, item 65c;                    |
| 7.2 | ADR      | : Class 6.1, item 65c;                    |
| 7.3 | IMO-IMDG | : Class 6.1, packaging group III No 1690; |
| 7.4 | IATA     | : Class 6.1, packaging group III No 2674  |

## 8.0 Pre-delivery Inspection and Evaluation

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

## 9.0 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 SPAN or other recognize 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 or results provided are not complied to SAJ requirement.

