	Procedure : Specification for Water Treatment Chemical – Sodium Silicofluoride	
	Department : Material Evaluation Technical Committee (METC)	
	Document No: PBA/CHEM.SPEC/SSF	Revision No : 00
	Classification : Public	Effective Date : 27 June 2018

1.0 General

All chemicals (Sodium Silicofluoride) shall be of a grade suitable for the treatment of drinking water and shall contain no soluble minerals or organic substances capable of producing deleterious or injurious effects on public health.

The Sodium Silicofluoride shall be in accordance to MS 1724:2004; Sodium Silicofluoride for use in potable water supply – specification.

2.0 Scope

The specification for Water Treatment Chemical – Sodium Silicofluoride is a guideline for the Sodium Silicofluoride suppliers to comply — in order to supply the Sodium Silicofluoride for PBAPP's use in potable water supply service.

3.0 SPAN Requirements

All suppliers of the chemical must be registered in the Suruhanjaya Perkhidmatan Air Negara (SPAN) Listing / Registration of Suppliers, and the registration must be valid during period of supplying of the chemical.


4.0 Safety & Health Requirements

4.1 All suppliers shall fully comply with the clauses / requirements in:

- a) Occupational Safety and Health Act , 1994,
- b) Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013,
- c) Industry Code of Practice on Chemicals Classification and Hazard Communication 2014 (ICOP 2014),
- d) Any Regulations / Orders; and
- e) As well as other applicable laws

5.0 Halal and NSF Certificates Requirements

All chemicals (Sodium Silicofluoride) shall have valid HALAL certificate and NSF (National Sanitation Foundation) certificate.

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6.0 Chemical Requirement


6.1 Purity Criteria

6.1.1 Sodium Silicofluoride shall not contain any impurities and additives in such concentrations that are capable of producing deleterious or injurious effects on the health of those consuming water that has been properly treated with this product.

6.1.2 The Sodium Silicofluoride must comply with the requirements as specified in Table 1.

Parameter	PBAPP specifications	Test Method
Sodium Silicofluoride Na ₂ SiF ₆ (dry basis) , % (w/w)	98% minimum	Annex A MS 1724:2004
Insoluble matter , % (w/w)	0.5% maximum	Annex B MS 1724:2004
Moisture , % (w/w)	0.5% maximum	ISO 5444
Anti-caking agent , % (w/w)	1.0% maximum	N/A
Particle size, passing sieve 250µm, % (w/w)	90% minimum	N/A

Table 1 : Requirements for Sodium Silicofluoride


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6.2 Toxic Substances

The content of toxic substances in the product must comply with the requirements specified in Table 2.

Parameter	Maximum Limit in mg/kg of dry substance	Test method
Cadmium (Cd)	40	Annex C MS 1724:2004
Chromium (Cr)	400	
Nickel (Ni)	400	
Lead (Pb)	400	
Arsenic (As)	400	Annex D MS 1724:2004
Selenium (Se)	80	
Antimony (Sb)	80	
Mercury (Hg)	10	MS ISO 5993

Table 2 : Content of toxic substances

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7.0 Marking, Labeling and Packaging

7.1 Marking

7.1.1 The following information shall be marked legibly either on each container (bag / big bag):

- Chemical solution, trade names and grade
- Net Weight
- Name, address and telephone number of supplier and manufacturer
- Batch number
- The date of manufacturing; and shall bear such other markings as required by applicable laws
- The statement 'Potable grade'
- Expiry date of the chemical

7.1.2 In the case of shipment in bulk, every consignment shall carry a certificate setting out the above-mentioned information.

7.2 Risk and Safety Labeling and Safety Data Sheet (SDS)

7.2.1 Labeling requirements (written in both Bahasa Malaysia and English) shall apply to Hydrated Lime and shall comply with the requirements of the Regulations 6, 7, 8, 9, 10, 11 and 12 of the Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013, Industry Code of Practice on Chemicals Classification and Hazard Communication 2014 (ICOP 2014), Occupational Safety and Health Act 1994 (Act 514) and Regulation and Orders.

7.2.2 Suppliers shall furnish dual languages (English and Bahasa Malaysia) of an up-to-date Safety Data Sheet (SDS) complying with Regulation 13 of the Occupational Safety and Health (Classification, Labeling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 for each chemical before their first delivery to PBAPP Sdn. Bhd.


7.3 Packaging, Chemical Handling during Transportation, Labeling and Certificate of Analysis

7.3.1 Packaging, Chemical Handling during Transportation and Labeling

7.3.1.1 All suppliers must prepare packaging according to the below Table 3: Requirement of Packaging.

Chemical	Packing Description
Sodium Silicofluoride	25kg net in bags of 1 ply polyethylene with 4 ply craft paper and in wooden pallet for every 40 bags (1tonne)


Table 3: Requirement of Packaging

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- 7.3.1.2 The packaging shall be securely sewn at both ends to provide sufficient sealing at ends to prevent leaking and also be with stand rough handling.
- 7.3.1.3 No contamination of Sodium Silicofluoride by toxic substances or other foreign substances shall occur during transportation.
- 7.3.1.4 Broken bags, drums, containers, rebadged chemicals or other poor packing conditions shall be rejected and PBAPP reserves the right to reject any good that in their opinion is considered poorly packed.
- 7.3.1.5 It is mandatory requirement to state the lot number, manufacturer date and expiry date at all packages of shipments.
- 7.3.1.6 The supplier is required to collect back all the empty used chemical bags from the PBAPP WTP's chemical store for proper disposal according to relevant legal requirements.
- 7.3.1.7 The supplier shall provide recommendations for appropriate materials of constructions for the storage, handling and packaging of each specific product.

7.3.2 Certificate of Analysis (COA)

- 7.3.2.1 A certificate of analysis, with the indication of country of origin (where applicable) shall accompany all deliveries for the chemical and to be given to the end users.
- 7.3.2.2 The contents of the certificate of analysis shall include the following:
- Sodium Silicofluoride (dry basis) , % (w/w)
 - Insoluble matter , % (w/w)
 - Moisture , % (w/w)
- 7.3.2.3 The COA shall contain the Batch No., parameter, PBAPP Specification, Actual Results and a column stating comparison of the result against PBAPP specification (Compliance to PBAPP specification). Supplier must provide the COA according to the Sample Format as tabulated in Table 4.

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Customer / Location of Chemical Delivered to : Tanker / Lorry Number : Delivery Date : Delivery Order Number : Name of Chemical : Batch Number : Country of Origin : Manufacturing Date : Expiry Date :			
Parameter	PBAPP Specifications	Actual Result	Compliance
Sodium Silicofluoride (dry basis) , % (w/w)	≥ 98%		
Insoluble matter , % (w/w)	≤ 0.5%		
Moisture , % (w/w)	≤ 0.5%		

Table 4 : Sample Format of COA Report

7.3.2.4 A comprehensive certificate of analysis shall be provided to end users upon their request and the parameter as per 6.1 Table 1 and 6.2 Table 2.