



**HIP**  
**PETROHEMIJA**

Synthetic Rubber Factory Elemir  
Petrohemija d.o.o. Pančevo

BP0402-SC061

Version: 6

Identification number:

Date:

## INPUT MATERIAL SPECIFICATION – SODIUM FORMALDEHYDE SULFOXYLATE

### I INFORMATION ON MANUFACTURER

### II PRODUCT NAME - SODIUM FORMALDEHYDE SULFOXYLATE

### III SUBJECT AND PURPOSE OF THIS SPECIFICATION

This specification defines the required properties of sodium formaldehyde sulfoxylate, which is used in the SBR production process in FSK Elemir, for an activator preparation, and it serves as a basis for assessment of input material quality conformance with the specified requirements i.e. as an acceptance criterion.

### IV TECHNOLOGICAL PROCESS DESCRIPTION

Sodium formaldehyde sulfoxylate is used in the SBR production plant for preparation of activators which are used in the cold emulsion copolymerization.

### V PRODUCT USE

Sodium formaldehyde sulfoxylate is used in the SBR plant for activator preparation, as an additional reducing agent  $Fe^{2+}$ . For activation of 1 mol of pinanehydroperoxide it is necessary to use one mol of salt  $Fe^{2+}$ . Without presence of sodium formaldehyde sulfoxylate a large quantity of  $Fe^{3+}$  would be formed. The presence of high amount of iron in the finished product of styrene butadiene rubber is undesirable because it accelerates the thermal oxidation reduction process. For that reason a certain amount of sodium formaldehyde sulfoxylate is added to the process, and its tasks is to reduce iron from a higher valence level to a lower one. Also in this way the divalent iron can be used again for peroxide activation.

### VI PRODUCT QUALITY AND COMPOSITION

Technical properties of sodium formaldehyde sulfoxylate:

Sodium formaldehyde sulfoxylate by its chemical composition is sodium hydroxymethanesulfinate hydrate ( $CH_3NaO_3S \times H_2O$ ). Table 1 shows the specified technical properties of sodium formaldehyde sulfoxylate, which must be checked before delivery acceptance, in accordance with the FSK Input Materials and Chemicals Inspection and Test Plan (BP0402-PK457).

Technical properties serve as a basis for assessment of product quality conformance with the specified requirements regarding quality, i.e. as one of the product acceptance criteria.

**Table 1**

<b>ΦPHYSICAL-CHEMICAL PROPERTIES:</b>				
<b>Ord. No.</b>	<b>PROPERTY</b>	<b>SCOPE OF ALLOWABLE VALUES</b>	<b>UNIT</b>	<b>TEST METHOD</b>
1.	NaHSO <sub>2</sub> HCHO <sub>2</sub> H <sub>2</sub> O content	98 - 100	wt %	FSK int.10.2.15.1
2.	Iron content	max 30	wt ppm	*
3.	Lead content	max 10	wt ppm	*
4.	Cadmium content	max 1	wt ppm	*
5.	Zinc content	max 6	wt ppm	*
6.	Arsenic content	max 0,2	wt ppm	*
7.	Cu, Mn content	0	wt ppm	*
8.	pH (100g/1 lit. water)	9 - 11		FSK int. 10.1.3
9.	Appearance	white to white-grey pieces or powder		Visual

*\*Testing upon request outside of FSK*

## VII TRANSPORT

- Road or railway transport
- Alternative delivery method: NONE

## VIII DELIVERY

Form (state) of input material: solid (powder)

Delivery should be in 25 kg sacks – three ply PE and jute bag

Each packaging unit must be accompanied by the following documents:

- Test report
- Safety data sheet
- Delivery note

## IX LABELLING

Each packaging unit must have clearly legible information on it providing the following:

- Product name
- Manufacturer's data (Company name)
- Lot/batch number

- Packaging unit net mass
- Production date
- Expiry date

## X PRODUCT ACCEPTANCE CRITERIA

### X.1. Quality conformance with requirements

A product conforms to the specified requirements if its properties are within the scope of allowable values in all the points, i.e. if all the requirements of this specification are fulfilled, and if the industrial test has been passed successfully.

### X.2. Consistent quality deliveries

The input material delivery must comply with the approved sample for purchasing. A sample for purchase approval is inspected in accordance with the FSK Inspection and Test Plan for Input Raw Materials and Chemicals.

A manufacturer is obliged to submit information about any modification(s) in its production process and change(s) referring to its production location, as well as to deliver the samples produced under the new conditions.

After examining the documents and testing a sample, provided the industrial test gives positive result, FSK will give an approval for input material application and deliveries.

### X.3. Delivery acceptance criterion

The criterion for delivery acceptance shall be satisfied if the input inspection certifies that the quality and quantity comply with the accompanying documents and if the requirements of this specification are fulfilled in all the points.

Prepared by:	Controlled by:			Approved by:	Date:
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