

1. **Product name and chemical formula:** *A compound of caustic soda (NaOH) and sodium chloride (NaCl)*

2. **The job's objective, purpose, and required performance indicators:**

2.1. The purpose of the inquiry

<input type="checkbox"/>	for new production (new technology)	<input checked="" type="checkbox"/>	to replace a worn-out machine
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2.2. Purpose of the machine and its place in the flow-sheet:

Division of alkaline pulp into solid (NaCl) and liquid phases (mother liquor of NaOH).

What is used:

<input type="checkbox"/>	solid phase	<input type="checkbox"/>	liquid phase	<input checked="" type="checkbox"/>	both components
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2.3. Required operating mode:

<input checked="" type="checkbox"/>	continuous, 24 hours per day	<input type="checkbox"/>	periodic, __ cycle per day
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2.4. Required productivity:

sludge: 25000 kg/h

suspension: __ m³/h

2.5. Required final liquid phase volume of the sludge: no more than 4% by mass.

2.6. Permissible solids volume in the centrifuge centrate: no more than 6% by mass.

2.7. Permissible solids grinding:

<input checked="" type="checkbox"/>	yes	<input type="checkbox"/>	no
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2.8. The need to wash the sludge from foreign substances

<input checked="" type="checkbox"/>	yes	<input type="checkbox"/>	no
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2.9. The need for separate diversion of the mother liquor and washing filtrates

<input checked="" type="checkbox"/>	yes	<input type="checkbox"/>	no
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2.10. Inertisation requirement of the working chamber

<input type="checkbox"/>	yes	<input checked="" type="checkbox"/>	no
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2.11. Heating requirements of the chamber (centrifuge)

<input type="checkbox"/>	yes	<input checked="" type="checkbox"/>	no
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2.12. Requirements for machine exploitation:

under excessive pressure:

<input type="checkbox"/>	yes	<input checked="" type="checkbox"/>	no
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under vacuum:

<input type="checkbox"/>	yes	<input checked="" type="checkbox"/>	no
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3. **Characteristics of the product to be processed:**

3.1. **Suspension:**

3.1.1. Suspension name: the alkaline pulp

3.1.2. Chemical composition:

<i>Parameter name</i>	<i>Result of the analysis</i>
<i>The solid-liquid ratio, %</i>	<i>70:30</i>
<i>The suspension density, kg/m³</i>	<i>1720</i>
<i>NaCl, %</i>	<i>49,4</i>
<i>SO₄²⁻, %</i>	<i>0,12</i>
<i>Ca²⁺, %</i>	<i>no</i>
<i>Mg²⁺, %</i>	<i>no</i>
<i>NaOH, %</i>	<i>10,39</i>
<i>Na₂CO₃, %</i>	<i>0,74</i>
<i>Fe³⁺, %</i>	<i>0,000082</i>

3.1.3. The suspension density: 1,6-1,8 kg/dm³

3.1.4. Centrifuge entry temperature: 70°C

3.1.5. Deposition rate of solid phase particles: 0,95 cm/min.

3.1.6. Granulometric composition:

<i>Name</i>	<i>Particle size, mm</i>	<i>Share, %</i>
Granulometric composition	<i>over 1,0</i>	<i>0,00</i>
	<i>1-0,63</i>	<i>1,50</i>
	<i>0,63-0,4</i>	<i>20,80</i>
	<i>0,4-0,315</i>	<i>28,10</i>
	<i>0,315-0,2</i>	<i>37,50</i>
	<i>0,2-0,16</i>	<i>4,30</i>
	<i>0,16-0,063</i>	<i>5,80</i>
	<i>less than 0,063</i>	<i>2,00</i>

3.2.Liquid phase (mother liquor)

- 3.2.1. Name and chemical composition: NaOH (20-35% by mass)
- 3.2.2. The liquid phase density: 1300 – 1380 kg/m³
- 3.2.3. The liquid phase propensity: foamability
- 3.2.4. Volatile substances in the liquid phase: no
- 3.2.5. Possibility of contact of liquid phase with air: yes

3.3.Solid phase:

- 3.3.1. Name and chemical composition: NaCl (98-99% by mass)
- 3.3.2. Unit weight of the solid phase: 1200-1245 kg/m³
- 3.3.3. Insoluble impurities: no
- 3.3.4. Tamped density of the dry solid phase: 2160 kg/m³
- 3.3.5. Particle structure of the solid phase: crystal
- 3.3.6. Solid phase granulometric composition during centrifugation on the existing machines:

<i>Particle size, mm</i>	<i>“Krauss-Maffei CZ-70-1-BL” position 7-08p1, %</i>	<i>“Krauss-Maffei CZ-70-1-BL” position 7-08p2, %</i>	<i>“Ferrum P-80/2” position 7-09, %</i>
<i>over 1,0</i>	<i>0,00</i>	<i>0,00</i>	<i>0,00</i>
<i>1-0,63</i>	<i>0,80</i>	<i>1,40</i>	<i>11,10</i>
<i>0,63-0,4</i>	<i>20,51</i>	<i>15,82</i>	<i>25,90</i>
<i>0,4-0,315</i>	<i>30,61</i>	<i>27,26</i>	<i>25,00</i>
<i>0,315-0,2</i>	<i>36,26</i>	<i>39,90</i>	<i>28,70</i>
<i>0,2-0,16</i>	<i>4,04</i>	<i>7,66</i>	<i>4,10</i>
<i>0,16-0,063</i>	<i>7,78</i>	<i>7,56</i>	<i>5,00</i>
<i>less than 0,063</i>	<i>0,00</i>	<i>0,40</i>	<i>0,20</i>

4. Matter properties:

<i>Name</i>	<i>Solid phase</i>	<i>Liquid phase</i>
<i>Toxicity</i>	<i>yes</i>	<i>yes</i>
<i>Inflammability</i>	<i>no</i>	<i>no</i>
<i>Explosiveness</i>	<i>no</i>	<i>no</i>
<i>Abrasiveness</i>	<i>yes</i>	<i>no</i>
<i>Corrosive effect</i>	<i>yes</i>	<i>yes</i>

5. Note:

- 5.1.Electrical current: alternating, voltage – 380V, frequency – 50Hz;
- 5.2.Installation location: indoors.
- 5.3.Include pre-operational works in the scope of delivery. Accelerate the terms of pre-operational works.
- 5.4.Include equipment transportation in the scope of delivery (DAP). Specify delivery terms.
- 5.5.Provision of permits and equipment certifications:

5.5.1. *For measuring instruments and automatics: Technical Regulation of the Customs Union 010/2011 "On the Safety of Machinery and Equipment".*

5.5.2. *Copies of permits valid in the territory of the Russian Federation.*

5.5.3. *Approval certificate of the measuring instrument, verification procedure, certificate of primary verification; passport.*

5.6. *Provide for installation (included in the scope of delivery)*

5.6.1. Automatics (additional equipment, additional requirements):

1) *vibration sensor, the scale is (0-25,4) mm/s, the output is (4-20) mA with primary verification in the Russian Federation.*

2) *bearing temperature sensors (for front and rear bearings), resistive temperature transducer Pt100 with primary verification in the Russian Federation.*

Send out the output signals from the measuring sensors to the centrifuge separator box.

3) *install the controller and control panel in the automation cabinet.*

4) *oil temperature and pressure sensors on site.*

**All SI must have a measuring type approval certificate.*

5.6.2. Electrical part:

- *control cabinet (power) for the control of three-phase asynchronous electric motors for the rotor and pulsation drive;*

- *bodies of electric motors must be made of cast iron.*

5.6.3. Mechanical part:

- *provide for the delivery of a set of the SPTA for a two-year operation term in the commercial offer.*