

# Caustic Soda Pulp & Paper Procurement and QC Checklist

Use this checklist for quotation preparation, supplier qualification, receiving inspection and process release. Complete it with the mill's process engineer, laboratory, EHS and procurement teams.

## 1. Define the process duty

- Application identified: kraft make-up / soda pulping / oxygen delignification / E-EO-EOP extraction / deinking / pH control / water treatment / cleaning.
- Required quantity expressed as 100%-NaOH equivalent and purchasing period defined.
- Reporting basis stated: as received / as NaOH / as Na<sub>2</sub>O equivalent / percent by mass.
- Process constraints recorded: end pH, temperature, dilution, materials compatibility, recovery and sodium-sulfur balance.

## 2. Select form and logistics

| Decision                                             | Required value / choice | Supplier offer | Approved |
|------------------------------------------------------|-------------------------|----------------|----------|
| Form: bulk liquid / diluted liquid / flakes / pearls |                         |                | ■        |
| Nominal NaOH concentration                           |                         |                | ■        |
| Annual and shipment quantity                         |                         |                | ■        |
| Packaging / tanker / ISO tank / vessel               |                         |                | ■        |
| Cold-weather / heat-tracing requirement              |                         |                | ■        |
| Unloading connection and pump basis                  |                         |                | ■        |

## 3. Contract quality specification

| Parameter                          | Limit and basis | Method | COA result | Pass |
|------------------------------------|-----------------|--------|------------|------|
| NaOH assay / total alkalinity      |                 |        |            | ■    |
| Sodium carbonate                   |                 |        |            | ■    |
| Chloride or sodium chloride        |                 |        |            | ■    |
| Iron                               |                 |        |            | ■    |
| Sulfate                            |                 |        |            | ■    |
| Chlorate / specified anions        |                 |        |            | ■    |
| Insolubles / suspended matter      |                 |        |            | ■    |
| Density at stated temperature      |                 |        |            | ■    |
| Trace metals / mercury if required |                 |        |            | ■    |
| Appearance / color                 |                 |        |            | ■    |

## 4. Supplier documents and change control

- Current TDS and SDS received and reviewed by process and EHS personnel.
- Representative COA and commitment to batch-specific COA confirmed.
- Production site, country of origin, product form and lot coding identified.
- Analytical methods and reporting basis are written in the contract.
- Supplier must notify the buyer before changes to production site, cell technology, concentration, impurity profile, packaging or test method.
- Complaint, retained-sample and independent-test procedure agreed.

## 5. Storage and unloading readiness

- Tank, piping, pump, valves, gaskets and heat tracing are compatible with concentration and temperature.
- Aluminum, copper, zinc, lead and unsuitable alloys are excluded from wetted service.
- Secondary containment, level indication, venting and overfill prevention are operational.
- Dedicated unloading connection is labeled and protected against cross-connection.
- Eyewash, safety shower, PPE, spill equipment and emergency communication are available and tested.
- Solid-caustic dissolution system includes controlled addition, agitation, heat management and dust control.

## 6. Receiving inspection and release

| Check                   | Acceptance evidence                                                                       | Status |
|-------------------------|-------------------------------------------------------------------------------------------|--------|
| Identity and seals      | Vehicle/package, product, seal and lot numbers match documents                            | ■      |
| Quantity                | Gross/tare or packaged net weight reconciled; dry-NaOH equivalent calculated              | ■      |
| Appearance              | No foreign matter, abnormal color, water ingress, damaged bags or frozen/blocked delivery | ■      |
| Concentration           | Titration or validated density check agrees with specification                            | ■      |
| Critical impurities     | Risk-based incoming tests agree with COA and contract                                     | ■      |
| Retention sample        | Representative sample labeled, sealed and stored under chain of custody                   | ■      |
| Process trial / release | Approved by authorized laboratory or process owner before unrestricted use                | ■      |

## 7. Process-performance verification

- Dosing is reconciled on a 100%-NaOH basis, with temperature-compensated concentration data.
- Kraft variables checked where applicable: EA, AA, sulfidity, residual effective alkali and Na/S balance.
- Pulp quality checked: kappa number, rejects, yield, viscosity, strength and brightness response.
- Bleach/deinking variables checked: end pH, residual chemical, washing, ERIC/brightness and effluent load.
- Deposits, corrosion, iron contamination, filter plugging and unusual caustic consumption are monitored.
- Approved operating window and nonconformance response are documented.

## 8. Red flags - stop and investigate

| Red flag                                                        | Why it matters                                                                |
|-----------------------------------------------------------------|-------------------------------------------------------------------------------|
| COA lists 'purity' but no method or basis                       | NaOH assay, total alkalinity and dry basis can be confused.                   |
| Price compared per wet ton only                                 | Water content and impurity differences can reverse the apparent cost ranking. |
| Density used as the only acceptance test                        | Temperature, carbonate and dissolved salts can affect interpretation.         |
| Supplier changes grade or plant without notice                  | Salt, iron, chlorate and concentration consistency may change.                |
| 50% liquid system has no cold-weather plan                      | Crystallization and viscosity can block unloading and dosing.                 |
| Solid caustic is manually dissolved without engineered controls | Heat release, dust and splash exposure can cause severe injury.               |
| Mill corrects poor washing by continually raising NaOH dose     | Chemical cost and fiber damage rise while the root cause remains.             |

**Approval record:** Supplier \_\_\_\_\_ Product / form \_\_\_\_\_ Concentration \_\_\_\_\_ Lot / trial \_\_\_\_\_ Reviewer \_\_\_\_\_  
Date \_\_\_\_\_