

# SOLID CAUSTIC SODA MICROPEARLS

## Membrane Cell Technology

### PDS-1122-0001

Some applications of this product may be regulated or restricted by national or international standards (e.g. for food additives, water treatment, the pharmaceutical industry, etc). The buyer and the eventual user, in his sole and entire liability, shall respect those standards, orders of any relevant authority, and all existing patents and intellectual properties rights; and shall comply with the laws and the regulations applicable to our products and/or to his activity. The buyer and the eventual user must independently determine the suitability of this product for any particular purpose and its manner of use. Please contact us for further information on grades developed for a specific end-use.

### Product Identification:

Solid Caustic Soda Micropearls are white, odourless, solid.

Sodium Hydroxide	NaOH	ID Number	011-002-00-6
Molecular Weight	40,01	EC Number (EINECS)	215-185-5
CAS Number	1310-73-2	UN Number	1823

For further information on product handling, transport, storage and product properties please consult our website:  
<http://www.solvaychemicals.com/EN/products/causticsoda/Solidcausticsoda.aspx>

### Product Specifications:

Characteristic	Unit	Value	Method of analysis <sup>(1)</sup>
Total Alkalinity (NaOH)	g/kg	≥ 990	Titrimetry (ISO 979)
Sodium Carbonate (Na <sub>2</sub> CO <sub>3</sub> )	g/kg	≤ 4	Titrimetry (ISO 3196)
Sodium Sulphate (Na <sub>2</sub> SO <sub>4</sub> )	mg/kg	≤ 80	Ion chromatography (ASTM E1787)
Sodium Chloride (NaCl)	mg/kg	≤ 200	Ion chromatography (ASTM E1787)
Iron (Fe)	mg/kg	≤ 10	Photometry (ISO 6685)
Mercury (Hg)	mg/kg	≤ 0,1	Flameless atomic absorption spectrometry (ISO 5993)
Arsenic (As)	mg/kg	≤ 2	ICP-AES <sup>(2)*</sup> (ISO 11885) (* Inductively coupled plasma atomic emission spectroscopy)
Cadmium (Cd)	mg/kg	≤ 1	
Chromium(Cr)	mg/kg	≤ 1	
Nickel (Ni)	mg/kg	≤ 2	
Lead (Pb)	mg/kg	≤ 0,5	
Antimony (Sb)	mg/kg	≤ 5	
Selenium (Se)	mg/kg	≤ 5	
Insoluble matter	-	conform	Visual test
Organic matter	-	conform	Visual test

(1) The product is analysed with the above mentioned methods or using local methods depending on laboratory equipments.

(2) Heavy Metals is the sum of As, Cd, Cr, Hg, Ni, Pb, Sb, and Se.

# SOLID CAUSTIC SODA MICROPEARLS

The production process of SOLID CAUSTIC SODA MICROPEARLS is not controlled in a way to ensure compliance with food or feed standards nor to applicable food, feed or pharmaceutical legislation and as such SOLID CAUSTIC SODA MICROPEARLS may neither be suitable nor satisfactory in all food or feed related applications, for all water treatment or water treatment related applications, and for all pharmaceutical applications. It is therefore under the sole responsibility and liability of the user to determine whether or not any of its contemplated use(s) is complying with applicable laws and regulations, including those related in food and feed applications.

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**Production Plant:**

Tavaux (France).

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**Please consult us for our Safety Data Sheet.**

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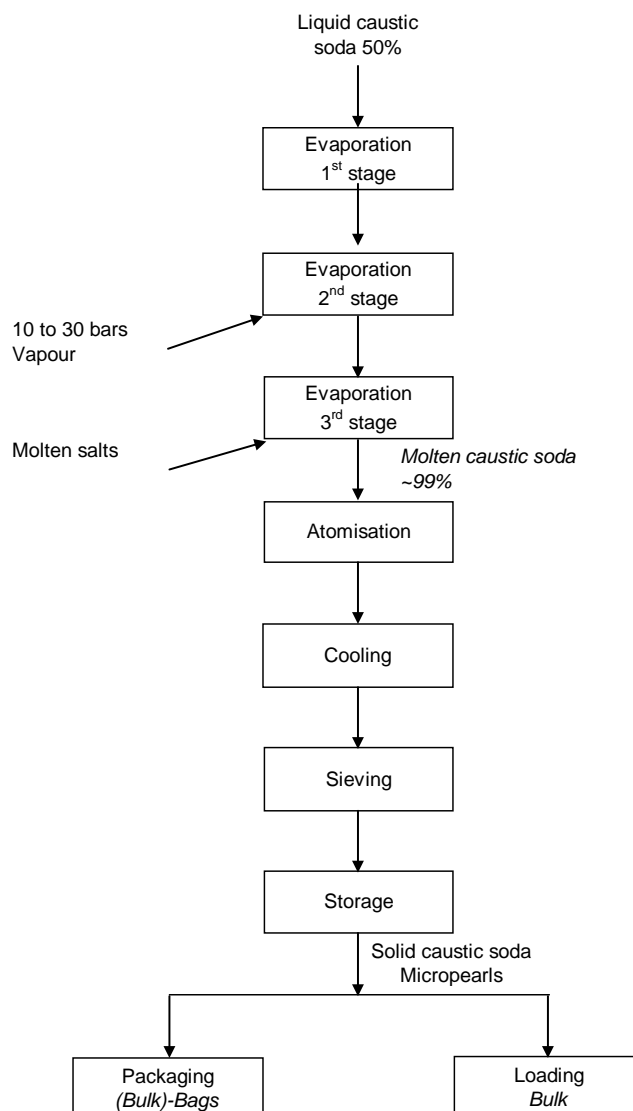


## CAUSTIC SODA - MICROPEARLS PRODUCTION PROCESS

### Principle

- **Solid caustic soda** is manufactured by evaporation of water from liquid caustic soda and then solidification into a required shape.
- Liquid caustic soda 50 % is evaporated to molten caustic soda. This is achieved by a multi stage evaporation process where, commonly, 10 to 30 bars vapour is used at the second stage, and loop of molten salts or heat transfer fluids is used at the third stage.
- INOVYN Trade Services commercialises solid caustic soda as **Micropearls**.

### Flow Chart



## Shaping

- **Solid caustic soda Micropearls**

Molten caustic soda is fed into a prilling tower. In this atomiser, caustic soda forms droplets which are then cooled and solidified into micropearls.



*Micropearls*

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[www.inovyn.com](http://www.inovyn.com)

## SOLID CAUSTIC SODA MICROPEARLS

### Anhydrous Sodium Hydroxide (NaOH) micropearls

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These statements apply to Solid Caustic Soda Micropearls (Anhydrous Sodium Hydroxide Micropearls) manufactured at Tavaux (France).

Inovyn's caustic soda is derived from mineral chemistry brine electrolysis process and is intended for technical uses. It can not be assumed that the sodium hydroxide manufactured and supplied by Inovyn is satisfactory for all food or food related applications without the assessment by the user.

Allergens	In some manufacturing plants, using electrolysis with membrane cell technology, sodium (bi)sulphites are added intentionally during the brine treatment. (Bi)sulphites are totally transformed into sulphates by chlorine in the cells. Therefore the concentration of (bi)sulphite expressed as SO <sub>2</sub> is expected to be less than 20 mg/kg. The other food allergens and their derivatives, as listed in the annex IIIa of the Directive 2000/13/EC as amended, are not expected to be present in INOVYN's Solid Caustic Soda Micropearls (Anhydrous Sodium Hydroxide Micropearls) because they are not added intentionally during the whole manufacturing process.
Animal Testing	INOVYN is a responsible company and conducts such tests as are necessary to ensure that we can give the best possible advice on the safe manufacture, handling and use of our products by our employees and those of our customers or processors. INOVYN has not specifically tested sodium hydroxide on animals and in particular, not since 31st December 1985. However many of INOVYN's products including Caustic Soda Liquor (Sodium Hydroxide) are used in a variety of applications, some of which require regulatory approvals that in turn necessitate toxicological testing. In the context of the European Regulation N°1223/2009, recast of the Cosmetic Products Directive 76/768/EEC and its subsequent amendments, a prohibition of animal testing for finished cosmetic products and for cosmetic ingredients was laid down since 2004 and 2009 respectively (testing ban).
BfR	Sodium hydroxide is listed under BfR Empfehlung XXXVI "Papiere, Kartons und Pappen für den Lebensmittelkontakt" and BfR Empfehlung XXXVI/2 "Papiere, Kartons und Pappen für Backzwecke". Therefore Solid Caustic Soda Micropearls (Anhydrous Sodium Hydroxide Micropearls) can be used in applications covered by above mentioned BfR provisions.
Carcinogenic, Mutagenic or toxic for the Reproduction (CMR)	Caustic Soda (Sodium Hydroxide) is not classified as CMR substance in Part 3 of Annex VI to Regulation N°1272/2008 as amended as Carcinogenic, Mutagenic or toxic for the Reproduction (CMR). Furthermore this kind of substances are not added intentionally during the whole manufacturing process of our Solid Caustic Soda Micropearls (Anhydrous Sodium Hydroxide Micropearls) therefore the presence of these substances is not expected.

Conflict Minerals	The raw materials used in the manufacture of Solid Caustic Soda Micropearls (Anhydrous Sodium Hydroxide Micropearls) are salt and water and are therefore not intended to include any of the following minerals: columbite- tantalite, cassiterite, gold, wolframite or their derivatives including tin, tantalum and tungsten. Moreover none of the raw materials used for the manufacture of Solid Caustic Soda Micropearls (Anhydrous Sodium Hydroxide Micropearls) are originating from sources outside of Europe.
Cosmetic Products	Solid Caustic Soda Micropearls does not contain any fragrance, nor does it contain any substance classified as CMR.
Drinking water	INOVYN's Solid Caustic Soda Micropearls (Anhydrous Sodium Hydroxide Micropearls) meets the purity criteria as defined in EN896:2012 "Chemicals used for the treatment of water intended for human consumption – Sodium Hydroxide".
Ecolabel Detergetns for Dish washer	None of the following substances/ingredients as listed in the Annex to Decision 2011/263/EU (phosphates, DTPA or diethylene triamine pentaacetic acid, perborates, EDTA or ethylenediamine tetraacetate, nitromusks, polycyclic musks, biocides and SVHC) are expected to be present in SOLID CAUSTIC SODA Micropearls because they are not added intentionally during the whole manufacturing process. Similarly the presence of reactive chlorine compounds is not expected in SOLID CAUSTIC SODA Micropearls.
Endocrine Disruptors	INOVYN's Solid Caustic Soda Micropearls (Anhydrous Sodium Hydroxide Micropearls) does not contain any of the 66 chemicals confirmed as category 1 endocrine disruptors in the European Commission's DG ENV commissioned report into the establishment of a priority list of substances for further evaluation of their role in endocrine disruption. <a href="http://ec.europa.eu/environment/chemicals/endocrine/strategy/substances_en.htm#priority_list">http://ec.europa.eu/environment/chemicals/endocrine/strategy/substances_en.htm#priority_list</a>
Food Contact Materials	<p><b>FOOD CONTACT EUROPE</b> INOVYN's Solid Caustic Soda Micropearls (Anhydrous Sodium Hydroxide Micropearls) is listed under the Commission Regulation (EU) 10/2011 Annex 1 as authorised monomers, other starting substances, macromolecules obtained from microbial fermentation, additives and polymer production aids.</p> <p><b>FOOD CONTACT - USA</b> Sodium hydroxide is listed in FDA Regulations 21CFR. Part 184 Direct Food Substances Affirmed As Generally Recognised as SAFE (GRAS) SubPart B – Listing of specific substances affirmed as GRAS 184.1763 – Sodium Hydroxide. Chemicals given GRAS in food affirmation may be used according to the following: Part 175 - INDIRECT FOOD ADDITIVES – Adhesives and Components of Coatings     SubPart B - Substances for Use Only as Components of Adhesives 175.105 – Adhesive     Subpart C--Substances for Use as Components of Coatings. 175.300 - Resinous and polymeric coatings.</p> <p>Part 176 - INDIRECT FOOD ADDITIVES: Paper and Paperboard Components     Subpart B - Substances for Use Only as Components of Paper and Paperboard.     176.170 - Components of paper &amp; paperboard in contact with aqueous and fatty foods. 176/180 - Components of paper and paperboard in contact with dry food.</p>

Part 177 - INDIRECT FOOD ADDITIVES – POLYMERS

Subpart B--Substances for Use as Basic Components of Single and Repeated Use Food Contact Surfaces. 177.1210 - Closures with sealing gaskets for food containers.

Subpart C--Substances for Use Only as Components of Articles Intended for Repeated Use 177.2600 - Rubber articles intended for repeated use

Food Status	<p>INOVYN's Solid Caustic Soda Micropearls (Anhydrous Sodium Hydroxide Micropearls) meets the purity criteria defined in Commission Regulation (EU) N° 231/2012 laying down specifications for food additives listed in Annexe II and III to regulation (EC) N° 1333/2008 (E524 Sodium Hydroxide).</p> <p>It cannot be assumed that Caustic Soda meeting the specification limits defined in the Commission Regulation (EU) N° 231/2012 is satisfactory for all food or food related applications without an assessment against appropriate regulations by the user. Sodium Hydroxide is not placed on the market as a food grade material; it is not produced at a registered food facility, nor is it manufactured to GMP or subject to HACCP assessment.</p>
Genetically Modified Organism	<p>INOVYN's Solid Caustic Soda Micropearls (Anhydrous Sodium Hydroxide Micropearls) is a synthetic mineral chemical substance that is free from Genetically Modified Organisms. No Genetically modified materials are used in the manufacture of our products.</p>
Halal	<p>INOVYN's Solid Caustic Soda Micropearls (Anhydrous Sodium Hydroxide Micropearls) is a synthetic mineral chemical substance manufactured by the electrolysis of sodium chloride solution. It is not derived from, nor does it contain any products of animal origin or ethyl alcohol. The manufacturing plant is dedicated to the manufacture of anhydrous caustic soda and no animal materials or ethyl alcohol is used when cleaning operations are conducted. Reference is made to some criteria as laid down in the General Guidelines CAC/CL 24-1997 for use of the term "Halal", issued by the Codex Alimentarius Commission.</p>
Ionising Radiation	<p>INOVYN's Solid Caustic Soda Micropearls (Anhydrous Sodium Hydroxide Micropearls) is not treated with ionising radiation.</p>
Kosher	<p>INOVYN's Solid Caustic Soda Micropearls (Anhydrous Sodium Hydroxide Micropearls) is a synthetic mineral chemical substance manufactured by the electrolysis of sodium chloride solution. It is not derived from, nor does not contain any animal or plant products including those derived from wheat, barley, spelt, rye or oats that are excluded from Kosher for Passover. None of the raw materials used in its manufacture are derived from animal or plant products. Our manufacturing plants are dedicated to the manufacture of caustic soda liquor and no animal or plant materials are used when cleaning operations are conducted.</p>
Metallic Catalysts	<p>INOVYN's Solid Caustic Soda Micropearls (Anhydrous Sodium Hydroxide Micropearls) are free of metallic catalysts since in the production process of Caustic Soda Liquor no metallic catalysts are used and in the subsequent process of evaporating water from Sodium Hydroxide Liquor to produce Solid Caustic Soda Micropearls no metallic catalysts are used either.</p>
Microorganisms	<p>The high pH property of Solid Caustic Soda Micropearls (Anhydrous Sodium Hydroxide Micropearls) does not make it a viable environment for bacteria and microorganisms.</p>

Mineral Origin	INOVYN's Solid Caustic Soda Micropearls (Anhydrous Sodium Hydroxide Micropearls) is a mineral chemical substance manufactured by electrolysis of sodium chloride solution. It is not derived from animal or plant origin and the presence of any animal or plant derived material (raw materials, reagents, additives) is excluded from the whole manufacturing process.
Nanomaterials	Nanomaterials and Nanotechnology (as defined according to Commission Recommendation 2011/696/EU) are not used in the production of Solid Caustic Soda Micropearls (Anhydrous Sodium Hydroxide Micropearls).
Pharmaceuticals ICH Q3D elemental impurities	Conform the International Conference of Harmonisation elemental impurities Q3D: none of the elements from class 1: As, Cd, Hg, Pb class 2a: Co, Ni, V class 2b: Ag, Au, Ir, Os, Pd, Pt, Rh, Ru, Tl class 3: Ba, Cr, Cu, Li, Mo, Sb, Sn are intentionally added in Solid Caustic Soda Micropearls. These elements are taken in to account in a risk assessment.
Residual solvents	No solvents are used in the manufacture of Solid Caustic Soda Micropearls (Anhydrous Sodium Hydroxide Micropearls). None of the solvents listed in the ICH Guidelines (residual solvents in medicinal products) are used or produced during the manufacture of Solid Caustic Soda Micropearls (Anhydrous Sodium Hydroxide Micropearls) supplied by Inovyn.
RoHS and WEEE	The RoHS and WEEE Directives restrict the maximum concentrations of certain hazardous substances in electrical and electronic equipment: Lead 0.1%, Polybrominated Biphenyls 0.1%, Mercury 0.1%, Polybrominated Diphenyl Ethers 0.1%, Hexavalent Chromium 0.1%, Cadmium 0.01%. Polybrominated biphenyls and polybrominated diphenyl ethers are not used in the production of Solid Caustic Soda Micropearls (Anhydrous Sodium Hydroxide Micropearls) nor are they produced as impurities during the manufacturing processes. The INOVYN plant at Tavaux (France) uses membrane cell technology to produce caustic soda, this is a mercury free process, Hg <0.01ppm (limit of detection).
SVHC	The candidate list of Substances of Very High Concern (SVHC) established in accordance with article 59(1) of the REACH Regulation relating to substances potentially subject to the authorization procedure is published on the ECHA website. Solid Caustic Soda Micropearls (Anhydrous Sodium Hydroxide Micropearls) is NOT included in this candidate list, nor is it listed in the recommendation lists of ECHA to be included in Annex XIV of REACH, nor is it included in this Annex XIV, nor does it contain intentionally substances included in these lists at a concentration level > 0.1%. <a href="http://echa.europa.eu/web/guest/candidate-list-table">http://echa.europa.eu/web/guest/candidate-list-table</a>
TSE/BSE	INOVYN's Solid Caustic Soda Micropearls (Anhydrous Sodium Hydroxide Micropearls) is a synthetic mineral chemical manufactured by the electrolysis of sodium chloride solution. It is not derived from, nor does it contain, any products of animal origin. The manufacturing plants are dedicated to the manufacture of caustic soda liquor and no animal materials are used when cleaning operations are conducted.



Volatile Organic  
Compounds (VOC)

Solid Caustic Soda Micropearls (Anhydrous Sodium Hydroxide Micropearls) is a synthetic mineral chemical manufactured by the electrolysis of sodium chloride solution. No volatile organic compound is added intentionally during the whole manufacturing process.

24 January 2018

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