## Dr Franz Goetzfried, January 28, 2021

## COMPLIANCE OF THE ORGANIC PRODUCTION OF SEA SALT AND OTHER SALTS FOR FOOD AND FEED WITH THE OBJECTIVES AND GENERAL PRINCIPLES OF REGULATION (EU) 2018/848

		Qualification		Salamant
:	Evaporated sait	KOCK SAIT	Sea Sait	Solar Salt
The distinction	<ul> <li>Mineral of natural origin.</li> </ul>	<ul> <li>Mineral of natural origin.</li> </ul>	- Mineral of natural origin.	- Mineral of natural origin.
between natural and	<ul> <li>Production techniques do not</li> </ul>	- Production techniques do not	- Production techniques do not	- Production techniques do
non-natural	modify the mineral character.	modify the mineral character.	modify the mineral character.	not modify the mineral
production				character.
techniques (whereas				
10)				
The contribution of	Not applicable	Not applicable	Not applicable	Not applicable
salt production to				
the development of				
rural areas (whereas				
10)				
The contribution to	- Use of best available	<ul> <li>Low energy consumption.</li> </ul>	- Use of sun and wind for	- Use of sun and wind for
protection of the	techniques for evaporation,	<ul> <li>Low carbon footprint.</li> </ul>	concentration and	evaporation and
environment and	crystallization, centrifugation	<ul> <li>Very low water footprint.</li> </ul>	crystallization of seawater.	crystallization of lake
climate (Art 4(a))	and drying (comparable with	- Disposal of process wastes in	- Low energy consumption.	brines.
	techniques for organic sugar	empty chambers of own	- Low carbon footprint.	- Low energy consumption.
	production).	underground mines.	- Very low water footprint.	- Lowest carbon footprint.
	- Efficient energy use.	- No generation of wastewater.	- Disposal of process wastes	- Very low water footprint.
	- Low or medium carbon	<ul> <li>Above ground only small</li> </ul>	(calcium carbonate, calcium	<ul> <li>Requires large areas.</li> </ul>
	footprint (depending on share	areas are needed.	sulfate) in concentration	
	of renewable energy).		ponds.	
	- Low water footprint.		- Disposal of mother liquor	
	- Evaporated water is reused for		("bittern") from crystallizer	
	solution mining.			

The contribution to a non-toxic environment (Art 4(d))	The encouragement of short distribution channels and local production in the various areas of the Union ((Art 4(f)	
<ul> <li>No toxic wastes result from production.</li> <li>Processing aids (which helps to increase the energy efficiency of evaporated salt plants) leave the process with the sludges of brine treatment</li> </ul>	<ul> <li>Produced in various areas throughout the whole Union.</li> <li>Short distribution channels with low carbon footprint guaranteed.</li> <li>Guarantees the local availability of organic salt, even with growing demand.</li> </ul>	<ul> <li>Disposal of process wastes (sludges from brine treatment, water-insolubles from rock salt dissolving) in own brine caverns or underground salt mines.</li> <li>Disposal of mother liquor from the evaporative crystallization to rivers, lakes, or to the sea within the limits set by the competent authorities.</li> <li>Above ground only small areas are needed.</li> </ul>
<ul> <li>No toxic wastes result from production.</li> <li>NO<sub>x</sub> from explosives detonation creates due to low specific explosives consumption no environmental problem.</li> </ul>	<ul> <li>Produced in various areas throughout the whole Union.</li> <li>Short distribution channels with low carbon footprint guaranteed.</li> <li>Guarantees the local availability of organic salt, even with growing demand.</li> </ul>	
- No toxic wastes result from production.	<ul> <li>Due to the climatic conditions produced only at the coastline of the Mediterranean Sea and the Southern Atlantic.</li> <li>Short distribution channels in Southern Europe.</li> <li>Guarantees the local availability of organic salt, even with growing demand.</li> </ul>	ponds to the sea diluted with water only Requires huge areas.
- No toxic wastes result from production.	- Due to the climatic conditions produced only at the coastline of the Mediterranean Sea (and Africa) Short distribution channels in Southern Europe Guarantees the local availability of organic salt, even with growing demand.	

The responsible use of energy and natural resources, such as water, soil, organic matter, and air (Art 5(c))	The preservation of natural landscape elements, such as natural heritage sites (Art 5(b))	The respect for nature's systems and cycles (Art 5(a))	
<ul> <li>Use of best available techniques for evaporation and crystallization.</li> <li>Efficient energy use.</li> <li>Extremely low or low carbon footprint (depending on share of renewable energy).</li> <li>Low water footprint</li> <li>Evaporated water is reused for solution mining.</li> <li>No soil and organic matter necessary.</li> <li>Air from thermal salt drying is dedusted.</li> </ul>	<ul> <li>Only small areas above ground are needed.</li> <li>No influence on natural landscape.</li> <li>Preservation of natural landscape elements, such as natural heritage sites is guaranteed.</li> </ul>	- Producers fulfil all national and European requirements to safeguard the environment.	(disposal in brine caverns or empty chambers of salt mines).
<ul> <li>Low energy consumption.</li> <li>Extremely low carbon footprint.</li> <li>Extremely low water footprint.</li> <li>No soil and organic matter necessary.</li> <li>Air from mine ventilation is dedusted in the underground mine field.</li> </ul>	<ul> <li>Only small areas above ground are needed.</li> <li>No influence on natural landscape.</li> <li>Preservation of natural landscape elements, such as natural heritage sites is guaranteed.</li> </ul>	- Producers fulfil all national and European requirements to safeguard the environment.	- Miners health is not negatively affected (authorized NO <sub>x</sub> limits are respected by ventilation, organizational measures, and use of e-vehicles)
<ul> <li>Use of sun and wind for concentration and crystallization of seawater.</li> <li>Low energy consumption.</li> <li>Extremely low carbon footprint.</li> <li>Extremely low water footprint.</li> <li>No organic matter necessary.</li> <li>Use of soil for ponds maintenance only.</li> <li>Air from thermal salt drying is dedusted.</li> </ul>	<ul> <li>Huge areas are needed.</li> <li>Production takes place sometimes located in nature reserves.</li> </ul>	- Producers fulfil all national and European requirements to safeguard the environment.	
<ul> <li>Use of sun and wind for evaporation and crystallization.</li> <li>Low energy consumption.</li> <li>Extremely low carbon footprint.</li> <li>Extremely low water footprint.</li> <li>No organic matter necessary.</li> <li>Use of soil for ponds maintenance only.</li> <li>Air from thermal salt drying is dedusted.</li> </ul>	the environment.  - Large areas are needed.  - No influence on natural landscape.  - Preservation of natural landscape elements, such as natural heritage sites is guaranteed.	- Producers fulfil all national and European requirements to safeguard	

	climatic conditions (sun, wind, low rainfall)	regions where no huge suitable areas for construction of concentration and	climatic conditions where sun energy is low, and the precipitation is high.	
	<ul><li>crystallizer ponds.</li><li>Need specific</li></ul>	are not at the coast, where no sea water is available, or in	sea water is available.  - Process can be used under	(411)
•	concentration and	- Process well suited for salt	production in regions which	and local conditions
Africa).	<ul> <li>Huge suitable areas</li> </ul>	<ul> <li>In Europe, a lot of rock salt deposit are available.</li> </ul>	<ul><li>deposits are available.</li><li>Process well suited for salt</li></ul>	ecological, climatic,
Mediterranean Sea (and	seawater.	available.	- In Europe, a lot of rock salt	the regional
at the coastline of the	<ul> <li>Availability of</li> </ul>	rock salt deposits are	or natural brine are available.	to take account of
- Due to the climatic conditions produced only	- Conditions for this production process:	- Production in regions with underground or on-surface	<ul> <li>Production in regions where underground rock salt deposits</li> </ul>	production process
	::		even with growing demand.	
			availability of organic salt,	
			- Guarantees the local	
			of the employees.	
			the environment and the health	
			<ul> <li>Used processes do not harm</li> </ul>	
			impurities).	
	even with growing demand.	,	metal, bacteria, and other	
	availability of organic salt,	even with growing demand.	NaCl content, lowest in heavy	
	- Guarantees the local	availability of organic salt,	the highest purity (highest	5(d))
	clean seawater.	- Guarantees the local	- Evaporated salt is the salt with	human health (Art
demand.	production site and the use of	health of miners.	Europe.	environment and
even with growing	good selection of the	the environment and the	others since centuries outside	not harm the
availability of organic salt,	contamination is reduced by	- Used processes do not harm	the Celts in Europe and by	of processes that do
- Guarantees the local	- Risk of microplastics	outside Europe.	product, produced already by	produced by the use
the health of employees.	health of employees.	centuries in Europe and	- Evaporated salt is a traditional	for good that are
harm the environment and	the environment and the	product, produced since	environmental impacts.	consumers' demand
- Used processes do not	<ul> <li>Used processes do not harm</li> </ul>	- Rock salt is a traditional	natural brine are free from	respond to
with aride climate.	outside Europe.	environmental impacts.	- Rock salt and the other source	products that
centuries in world regions	centuries in Europe and	- Rock salt is free from	200 Million years ago.	high-quality
product, produced since	product, produced since	than 200 Million years ago.	which was formed more than	wide variety of
- Solar salt is a traditional	- Sea salt is a traditional	- Rock salt was formed more	<ul> <li>Originates from rock salt,</li> </ul>	The production of a

Are the additives essential?	Is the use of additives minimized?
<ul> <li>Necessary to avoid caking of fine-grained salts.</li> <li>Caked salt is not usable.</li> <li>Efficient anti-caking agents necessary.</li> <li>Water soluble anti-caking agents necessary for food processing.</li> <li>Only authorised anti-caking agents used in salt for organic food production and in salt for organic food production of salt with iodine is mandatory in several Member States.</li> </ul>	- Yes (less anti-caking additives used than authorized in salt for food and feed).
<ul> <li>Necessary to avoid caking of fine-grained salts.</li> <li>Caked salt is not usable.</li> <li>Efficient anti-caking agents necessary.</li> <li>Water soluble anti-caking agents necessary for food processing.</li> <li>Only authorised anti-caking agents used in salt for organic food production and in salt for organic food production of salt with iodine is mandatory in several Member States.</li> </ul>	crystallizer ponds are available.  - Process can be used under climatic conditions where sun energy is low, and the precipitation is high.  - Yes (less anti-caking additives used than authorized in salt for food and feed).
<ul> <li>Necessary to avoid caking of fine-grained salts.</li> <li>Caked salt is not usable.</li> <li>Efficient anti-caking agents necessary.</li> <li>Water soluble anti-caking agents necessary for food processing.</li> <li>Only authorised anti-caking agents used in salt for organic food production and in salt for organic farming.</li> <li>Fortification of salt with iodine is mandatory in several Member States.</li> </ul>	- Therefore, produced in Europe only at the coastline of the Mediterranean Sea and the Southern Atlantic.  - Yes (less anti-caking additives used than authorized in salt for food and feed).
<ul> <li>Necessary to avoid caking of fine-grained salts.</li> <li>Caked salt is not usable.</li> <li>Efficient anti-caking agents necessary.</li> <li>Water soluble anti-caking agents necessary for food processing.</li> <li>Only authorised anticaking agents used in salt for organic food production and in salt for organic farming.</li> <li>Fortification of salt with iodine is mandatory in several Member States.</li> </ul>	- Yes (less anti-caking additives used than authorized in salt for food and feed).