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# SINTEF REPORT

TITLE


**Overview of laws and regulations regarding antifouling methods in fish farming**

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Innovasjon Norge /FHF

|                                    |  |   |                                 |
|------------------------------------|--|---|---------------------------------|
| REPORT NO.<br>SFH80 A066001        | CLASSIFICATION<br>Open                         | CLIENTS REF.  |                                 |
| CLASS. THIS PAGE                   | ISBN<br>82-14-03861-8                          | PROJECT NO.<br>815006   | NO. OF PAGES/APPENDICES<br>35+6 |
| ELECTRONIC FILE CODE<br>Report.doc | PROJECT MANAGER (NAME, SIGN.)<br>Trude Olafsen | CHECKED BY (NAME, SIGN.)<br>Ulf Winther   |                                 |
| FILE CODE                          | DATE<br>2006-01-18                             | APPROVED BY (NAME, POSITION, SIGN.)<br>Ulf Winther  |                                 |

## ABSTRACT

This report is part of the "Co-ordinating project – alternative antifouling strategies in the Norwegian Aquaculture Industry". The project as a whole seeks to follow up the antifouling action plan made by the Norwegian Seafood Federation (FHL Havbruk) a few years ago. This report seeks to give an overview of the relevant acts and regulations in Norway regarding antifouling and demands related to approval of new antifouling solutions. It also gives an overview of important EU regulations and other international declarations.

Biofouling of nets placed in water is caused by many different organisms, organisms which in Norway mainly are classified as algae, shells and hydroids. There are two main methods to keep the nets free from fouling. Either with the 1) use of chemicals, where copper make up the active substance in the marine antifouling substances used in Norway, or with 2) mechanical/technical solutions, e.g. washing and drying of nets.

As the report shows there is an extensive set of regulations which concerns and regulate the use of chemicals and more specific the use of copper as an antifouling substance. New chemicals which are planned to replace copper will need to be approved according to the existing regulations. Antifouling strategies which do not include the use of chemicals are not regulated in the same way, and mechanical/technical solutions do not seem to need any sort of official approval.

| KEYWORDS           | ENGLISH     | NORWEGIAN            |
|--------------------|-------------|----------------------|
| GROUP 1            | antifouling | begroingsbekjempelse |
| GROUP 2            | regulations | forskrifter          |
| SELECTED BY AUTHOR | copper      | kobber               |
|                    |             |                      |
|                    |             |                      |

## SUMMARY

This report is part of the “Co-ordinating project – alternative antifouling strategies in the Norwegian Aquaculture Industry”. The project as a whole seeks to follow up the antifouling action plan made by the Norwegian Seafood Federation (FHL Havbruk) a few years ago. This report seeks to give an overview of the relevant acts and regulations in Norway regarding antifouling and demands related to approval of new antifouling solutions. It also gives an overview of important EU regulations and other international declarations.

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As the report shows there is an extensive set of regulations which concerns and regulate the use of chemicals and more specific the use of copper as an antifouling substance. New chemicals which are planned to replace copper will need to be approved according to the existing regulations. Antifouling strategies which do not include the use of chemicals are not regulated in the same way, and mechanical/technical solutions do not seem to need any sort of official approval.

### **National and international environmental goals**

Laws and regulations in the EU and Norway are based on national and international goals and agreements. In relation to the use of antifouling substances, for instance copper, the North Sea Declaration and the OSPAR Convention (1992) are the most important international agreements.

The EEA agreement makes the EU to Norway’s most important partner on environmental issues. New legislation in the environmental area which is incorporated in the EEA agreement is also incorporated in the Norwegian legislation. As a general rule Norway must therefore regulate the use of chemicals in the same way as the EU countries.

Previous Norwegian white papers have set a goal for reduction of copper. In St.meld. 25 “Regjeringens miljøvernpolitikk og rikets miljøtilstand” (2002-2003) this goal is confirmed. A list of about 30 prioritised chemicals<sup>1</sup>, which were selected because of their dangerous characteristics and partly because they are compromised by international agreements is included. The heavy metal copper (Cu) and its compounds are on priority list B, which mean that emissions are to be substantially reduced within 2010. Copper and its compounds are therefore on the list over health -and environmental dangerous substances made by the Norwegian Pollution Control Authority (SFT).

### **Most important regulations for net service stations**

The two most important Norwegian regulations for net service stations, which wash and clean aquaculture nets, are the ”Regulation relating to reduction of pollution”(FOR-2004-06-01-931, Forurensningsforskriften)- chapter 17 and 25 and the “Regulation relating to recycling and treatment of waste”(FOR-2004-06-01-930, Avfallsforskriften)- chapter 11. This last-mentioned regulation impose the net service stations to clean the waste, in practice this implies a zero outlet limit on copper. This is the most important regulation regarding antifouling today. Also other regulations related to storage, use and handling of chemicals are important for net service stations, but also for aquaculture sites and companies.

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<sup>1</sup> See appendix for overview of the prioritized chemicals

### New solutions

According to the Norwegian Pollution Control Authority (SFT) the most important things to allow for when you look for new alternative solutions (substances) for antifouling measures to replace copper are 1) the “Regulation relating to classification, labelling etc. of hazardous chemicals” (FOR-2002-07-16-1139: Forskrift om klassifisering, merking mv. av farlige kjemikalier) which includes the List of Dangerous Substances (Stofflisten published by EU and SFT) and 2) the Biocide Directive (FOR-2003-12-18 nr 1848, Biocidforskriften).

The list of Dangerous Substances lists nearly 3500 hazardous chemicals. Many of these<sup>2</sup> are chemicals to be avoided when searching for new solutions, since there is a goal to reduce the emission of many of them. It is therefore important to check new potential antifouling substances with this list and with the Pollution Control Authority.

The Norwegian Biocide Directive came into force 1. January 2004 and this regulation is the implementation of the EU Council Directive concerning the placing of biocidal products on the market. According to the Biocide Directive a biocidal product contains active substances (biocides) which contribute to fighting unwanted substances. Biocidal product-type number 21 – “Antifouling products” is defined as “Products used to control the growth and settlement of fouling organism (microbes and higher forms of plants and animal species) on vessels, aquaculture equipment or other structures used in the water”. Based on this definition we understand that all chemicals used as an antifouling substance will need to be approved as a biocide.

It is the producer or importer of the biocidal product to an EEA country who are responsible for the application. The application demands documentation of among other things the chemical and physical nature of the biocidal product, the intended manner and area of use for the product, its toxicological data, eco toxicological data etc. The extent of necessary documentation will among other things depend on whether it is a new or existing substance, and whether its use as an antifouling product has been documented before. When one seek for new substances it is therefore important to know if the substance is new<sup>3</sup> (not existing) or already existing<sup>4</sup>. It is also important to know whether it has been used in Norway or in other European countries before, whether it has been used in the environment it is going to be used in before (the sea) and whether it has been used as an antifouling product before. Depending on the answers to these questions, the possibility and the necessary procedure/documentations needed to get the substance approved for use as an antifouling substance in aquaculture will vary. The regulation also states the costs relating to getting a biocidal product approved. The Norwegian Pollution Control Authority (SFT), is the competent Authority for this Directive in Norway and the institution where to seek help.

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<sup>2</sup> ”Regulation relating to restriction on the marketing and use of certain dangerous substances and preparation” (FOR 2004-06-01 nr 922: Forskrift om begrensning i bruk av helse- og miljøfarlige kjemikalier og andre produkter, Produktforskriften) and chemicals on the Priority list which is part of the list of Dangerous Substances.

<sup>3</sup> Definition of a new chemical is according to “FOR 1996-07-01 nr 715: Forskrift om forhåndsmelding av nye kjemiske stoffer” a substance which is not part of the EINECS list in EU. *Nytt kjemisk stoff*: Et kjemisk stoff som ikke er oppført i EUs liste EINECS.

<sup>4</sup> Existing substances: The EU Commission has so far prepared 4 lists of prioritised substances which there shall be prepared thorough health- and environment risk evaluations for. The lists were published 26.05.1994, 28.09.1995, 28.01.1997 and 25.10.2000. Look in : “FOR 1995-05-04 nr 460: Forskrift om vurdering og kontroll av risikoer ved eksisterende stoffer”.

Approved biocidal products and active substances will be included in appendixes (I, IA or IB) to the Biocide Directive, in so called “positive lists”. Per June 2005 EUs appendixes (“Positive lists”) contains no approved products and substances. The first evaluation of substances is in progress, but “Product type 21 – Antifouling products”, which is the relevant product type for aquaculture, is not included in this first round off evaluation. They will according to SFT at the earliest be included in a round starting in 2006.

## TABLE OF CONTENTS

|  |           |
|--|-----------|
| <b>1. Introduction</b>                                   | <b>6</b>  |
| <b>2. Method</b>   | <b>6</b>  |
| <b>3. National and international environmental goals</b> | <b>7</b>  |
| <b>4. Laws and regulations</b>                           | <b>10</b> |
| 4.1 Acts   | 10        |
| 4.2 Comments to the Acts                                 | 14        |
| 4.3 Regulations  | 15        |
| 4.4 Comments to the Regulations                          | 28        |
| <b>5. Important EU-directives</b>                        | <b>32</b> |
| <b>6. APPENDIX</b>                                       | <b>36</b> |

## 1. Introduction

This report is part of “Co-ordinating project – alternative antifouling strategies in the Norwegian Aquaculture Industry”. The project as a whole seeks to follow up the antifouling action plan made by the Norwegian Seafood Federation (FHL Havbruk) a few years ago. The project is initiated by FHL Havbruk and is financed by Innovation Norway (Innovasjon Norge) and The Norwegian Fishery and Aquaculture Industry Research Fund (FHF).

This report seeks to give an overview of the relevant acts and regulations in Norway regarding antifouling and demands made upon approval of new solutions to antifouling substances. It shall also give an overview of important EU regulations and other international declarations.

In the aquaculture industry nets are impregnated with “copper” as an active ingredient in antifouling substances. This impregnation of nets is made by net service stations (notvaskeri). Some fish farms are washing and repairing the nets themselves, but washing of impregnated nets at the fish farms will decrease and come to an end because of a new regulations put into force in Norway July 2005. The report will therefore show regulations which is addressed to both fish farms and/or net service stations.

## 2. Method

The following method has been used:

Stage 1: Collecting of relevant regulations from the actual public bodies. This is the most central laws and regulations. Internett ([www.lovdata.no](http://www.lovdata.no)) has been used as main source.

Stage 2: Contact is made with central persons regarding laws and regulations to ensure that necessary conditions are covered. A list of the institutions contacted is included.

Thereafter the material is systematised in form of this report which includes a short description of the circumstances regulated. In addition the relevant acts and regulations are systematised in a folder.

### Fouling of nets

Nets placed in water are fouled by different organisms, like boats and other equipment placed in the sea. The biofouling is composed of many different organisms, but can in Norway mainly be classified as algae, shells (mostly blue mussels) and hydroids.

Copper make up the active ingredient in the marine antifouling substances used in Norway. In general the nets used in fish farms are saturated with a copper “solution” (Cu<sub>2</sub>O) before they are put to sea. This procedure is done by a net service station.

Discharge of copper from fish farm related industries exists in the shape of:

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1. Effluent water/sludge from the companies washing the nets (mainly net service stations, but also some fish farms).
2. Leaching (discharge) of copper from the impregnated nets while they are at sea.

The report will therefore show acts and regulations which are addressed to both fish farms and/or net service stations (notvaskeri). In addition regulations relevant to importers and traders of chemical substances are included.

### **3. National and international environmental goals**

Laws and regulations in Norway and EU are based on national and international goals and agreements. As a background we show the most important environmental goals and agreements here.

#### **International agreements vital to Norway**

Many hazardous chemicals are transported by winds and ocean currents and international agreements to regulate their use and forbid emissions of dangerous chemicals are very important. For Norway the most important of these agreements are the global POPs Convention, the Economic Commission for Europe (ECE) protocols, the North Sea Declarations, the Oslo-Paris Convention (OSPAR) and the Prior Informed Consent (PIC) Convention. In relation to the use of the antifouling substance copper, the North Sea Declaration and the OSPAR Convention are the most important international agreements.

#### **International environmental goals**

Together with countries around the North Sea, Norway participates in the North Sea Declaration for protection of the North Sea. Norway has also signed the OSPAR convention (1992) for protection of the marine environment in the North Eastern Atlantic area. In these forums observation activities are coordinated and goals are set for reduction of supply of nutrients and other chemical substances to the sea area. The partners have committed themselves to stop the discharge of environmental contaminants in 2020 (the generation goal). OSPAR has made a list of chemicals with the highest priority<sup>5</sup>. In this list copper is not included, but other heavy metal like mercury, cadmium, lead and tin compounds are included.

#### **EU and EEA-agreement**

The EEA agreement makes EU to Norway's most important partner on environmental issues. Especially related to challenges with waste, production and use of health and environmental hazardous products and pollution of air, water and earth. Norway's possibilities to participate in the development of EU regulation are through the access to participate in the European Commissions working groups, expert groups and committees. New legislation on the environmental area which is incorporated in the EEA agreement is also incorporated in the Norwegian legislation. As a general rule,

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<sup>5</sup> [www.ospar.org](http://www.ospar.org)

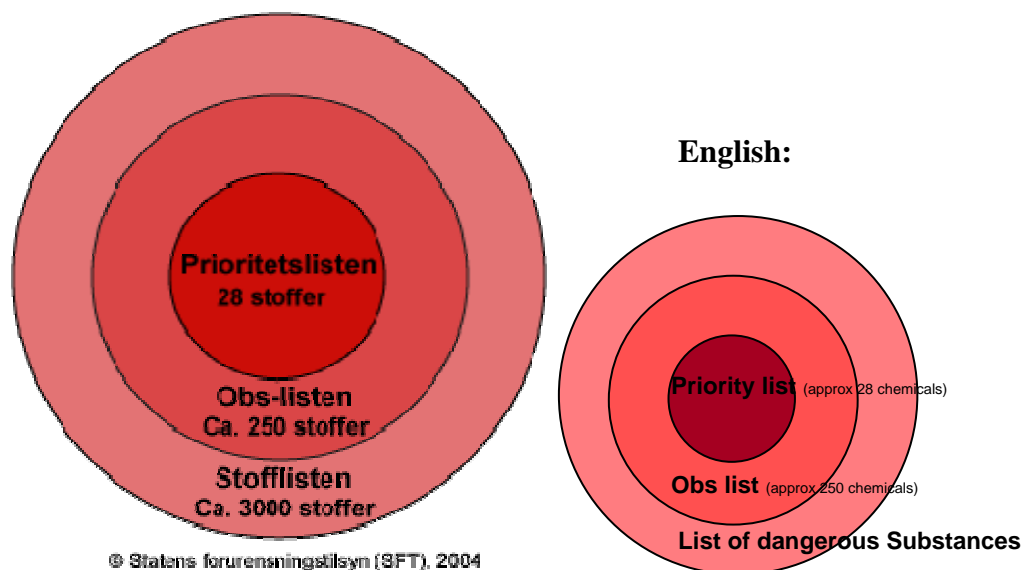


Norway must therefore regulate the use of chemicals in the same way as the EU countries. This also means that progress and decisions in the EU system are of direct importance for how Norway develops its legislation on chemicals.

### National environmental goals

The work with the North Sea Declarations (Nordsjøavtalene) forms the basis of the work the Norwegian government has done in order to establish environmental goals for chemicals in general, included copper (Cu).

In a white paper - St.meld 46 (1988-89) a goal was set to reduce copper with 70%, within 1995 (starting 1985). St.meld. 58(1996-1997) reformed these goals to “the emission should be substantial reduced within 2010”. In St.meld 25 “Regjeringens miljøvernpolitikk og rikets miljøtilstand” (2002-2003) they follow up this goal. They include a list of about 30 prioritised chemicals<sup>6</sup> which were selected because of their dangerous characteristics and partly because they are compromised by international agreements. The heavy metal copper (Cu) and its compounds is on priority list B, which mean that emissions are to be substantially reduced within 2010. Copper and its compounds are therefore also on the list over health -and environmental dangerous substances (Obs-list) made by the Norwegian Pollution Control Authority (SFT). The List of Dangerous Substances (in Norway “Stofflisten”) contains the total information about health and environmental hazards for approximately 3500 substances. This Norwegian “Stoffliste” is harmonised with EU<sup>7</sup>.



**Figure 1. Overview of the Norwegian Pollution Control Authority’s List of dangerous Substances “Stoffliste”.**

<sup>6</sup> See appendix for overview of the prioritized chemicals

<sup>7</sup> Stofflisten is harmonised with EUs Council Directive 67/548/EEC Classification, packaging and labelling of dangerous substances in the European Union. This means that the substances on the list follow the same classification as in the EU. Norway has though an exception for 10 substances, which are classified differently then in the EU (copper not one of these).

SFT has recommended an introduction of "zero outlet" from wash, cleaning, disinfection and antifouling treatment of aquaculture nets. This because a reduction in the outlet from copper based antifouling paints will be an important contribution to achieve the national goal of a substantial reduction in copper emission by 2010.

**Existing national environmental performance measures** (from St.meld 25 (2002-2003) chapter 8):

1. Emission of some hazardous substances (priority list + some others) shall be stopped or reduces substantially by 2000, 2005 or 2010.
2. The emission of chemicals which form a serious threat to health and environment shall continuously be reduced with the intention to stop the emission within one generation (2020).
3. The risk of emission and use of chemicals shall cause damage on health and environment shall be substantially reduced.
4. Contamination of ground, water and sediments caused by earlier activities, wrong management of waste etc., shall not cause harm for serious polluting problems.

## 4. Laws and regulations

The direct descriptions of the acts and regulations are written in Norwegian with and English summary. Direct quotations from the acts and regulations are written in *Italic*. It is the part of the regulations which are found relevant for antifouling (fish farms, net service stations or producers/traders of chemicals) which are mentioned and not the total content of the acts and regulations.

### 4.1 Acts

| Text  | Responsible | Conditions which are regulated   | No. | Last changed                     | Effective date |
|---|-------------|--|-----|----------------------------------|----------------|
| <p><b>LOV-1981-03-13-6 Lov om vern mot forurensninger og om avfall (Forurensningsloven).</b></p> <p><a href="http://www.lovdata.no/cgi-wift/wiftldles?doc=/usr/www/lovdata/all/nl-19810313-006.html&amp;dep=alle&amp;kort+,+titt=forurensning&amp;">http://www.lovdata.no/cgi-wift/wiftldles?doc=/usr/www/lovdata/all/nl-19810313-006.html&amp;dep=alle&amp;kort+,+titt=forurensning&amp;</a></p> <p><b>Act relating to protection against pollution and relating to waste [The Pollution Control Act]</b></p> <p><a href="http://www.ub.uio.no/cgi-bin/ujur/ulov/sok.cgi">http://www.ub.uio.no/cgi-bin/ujur/ulov/sok.cgi</a></p> | MD          | <p>§ 1. <i>Loven har til formål å verne det ytre miljø mot forurensning og å redusere eksisterende forurensning, å redusere mengden av avfall og å fremme en bedre behandling av avfall. Loven skal sikre en forsvarlig miljøkvalitet, slik at forurensninger og avfall ikke fører til helseskade, går ut over trivselen eller skader naturens evne til produksjon og selvfornyelse.</i></p> <p>§ 2. <i>1) Det skal arbeides for å hindre at forurensning oppstår eller øker, og for å begrense forurensning som finner sted. Det skal likeledes arbeides for å unngå avfallsproblemer. 4) Avfall skal tas hånd om slik at det blir minst mulig til skade og ulempe. Det skal gjenvinnes der dette ut fra en avveining av miljøhensyn, ressurs-hensyn og økonomiske forhold er berettiget. 5) Kostnadene ved å hindre eller begrense forurensning og avfallsproblemer skal dekkes av den ansvarlige for forurensningen eller avfallet.</i></p> <ul style="list-style-type: none"> <li>• Plikt til å unngå forurensning (§ 7)</li> <li>• Grenseverdier for hvilke forurensninger som skal være tillat (§ 10)</li> <li>• Krav om søknad om tillatelse til utslipp (§ 11-20)</li> </ul> | 1   | LOV-2004-12-17-99 fra 2005-01-01 | 1983-10-01     |

| Text   | Responsible | Conditions which are regulated  | No. | Last changed                     | Effective date |
|--|-------------|---|-----|----------------------------------|----------------|
|  |             | <ul style="list-style-type: none"> <li>• Om avfallshåndtering (§ 27-37)</li> <li>• Straffeansvar (§ 78-80)</li> </ul> <p>The purpose of this Act is to protect the outdoor environment against pollution and to reduce existing pollution, to reduce the quantity of waste and to promote better waste management.</p> <p>The Act shall ensure that the quality of the environment is satisfactory, so that pollution and waste do not result in damage to human health or adversely affect welfare, or damage the productivity of the natural environment and its capacity for self-renewal.</p>   |     |                                  |                |
| <p><b>LOV 1976-06-11 nr 79: Lov om kontroll med produkter og forbrukertjenester (produktkontrollloven)</b></p> <p><a href="http://www.lovdato.no/all/nl-19760611-079.html">http://www.lovdato.no/all/nl-19760611-079.html</a></p> <p><b>The Product Control Act</b></p> <p><a href="http://www.ub.uio.no/ujur/ulovdata/lov-19760611-079-eng.pdf">http://www.ub.uio.no/ujur/ulovdata/lov-19760611-079-eng.pdf</a></p> | MD          | <p>§ 1. Loven har som formål å forebygge at produkter medfører helseskade, eller miljøforstyrrelser i form av forstyrrelser i økosystemer, forurensning, avfall, eller støy og lignende. Loven har også til formål å forebygge miljøforstyrrelser ved å fremme effektiv bruk av energi i produkter.</p> <p>§ 2. Denne lov kommer til anvendelse på produksjon, herunder utprøving, innførsel, omsetning, bruk og annen behandling av produkt og forbrukertjenester.</p> <p>Paragraf 3 av loven omhandler aktsomhetsplikten og substitusjonsplikten. Den som tilvirker, innfører, bearbeider, omsetter, bruker eller på annen måte behandler produkt som kan medføre virkning som nevnt i § 1, skal vise aktsomhet og treffe rimelige tiltak for å forebygge og begrense slik virkning.</p> <p>Virksomhet som bruker produkt med innhold av kjemisk stoff som kan medføre virkning som nevnt i § 1 skal vurdere om det finnes alternativ som medfører mindre risiko for slik virkning. Virksomheten skal i så fall velge</p> | 2   | LOV 2003-05-09-31 fra 2004-01-01 | 1977-09-01     |

| Text  | Responsible | Conditions which are regulated  | No. | Last changed | Effective date |
|---|-------------|---|-----|--------------|----------------|
|   |             | <p>dette alternativet, hvis det kan skje uten urimelig kostnad eller ulempe.</p> <p>The purpose of this Act is to prevent products from causing damage to health or disturbances of the environment in the form of disturbances of the ecosystem, pollution, waste, noise or the like. The Act shall ensure that the quality of the environment is satisfactory, so that pollution and waste do not result in damage to human health or adversely affect welfare, or damage the productivity of the natural environment and its capacity for self-renewal.</p>  |     |              |                |
| <p><b>LOV 2003-05-09 nr 31: Lov om rett til miljøinformasjon og deltakelse i offentlige beslutningsprosesser av betydning for miljøet (miljøinformasjonsloven).</b></p> <p><a href="http://www.lovdata.no/all/hl-20030509-031.html">http://www.lovdata.no/all/hl-20030509-031.html</a></p> <p><b>Act relating to the right to environmental information and participation in decision-making processes relating to the environment [Environmental Information Act]</b></p> <p><a href="http://odin.dep.no/md/english/doc/regelverk/acts/022051-200017/hov001-bn.html">http://odin.dep.no/md/english/doc/regelverk/acts/022051-200017/hov001-bn.html</a></p> | MD          | <p>Miljøinformasjonsloven gir alle borgere rett til opplysninger både fra offentlige myndigheter og private virksomheter om forhold som har betydning for miljøet.</p> <p><b>Private virksomheter</b></p> <ul style="list-style-type: none"> <li>• Alle næringer, industriproduksjonen så vel som jord- og skogbruket, transportsektoren og tjenesteproduksjonen, er omfattet av den nye miljøinformasjonsloven.</li> <li>• Miljøinformasjonsloven pålegger alle virksomheter en plikt til å ha kunnskap om miljøforhold i egen virksomhet som kan medføre en ikke ubetydelig påvirkning på miljøet, og på forespørsel å gi denne informasjonen ut.</li> </ul> <p>The purpose of this Act is to ensure public access to environmental information and thus make it easier for individuals to contribute to the protection of the environment, to protect themselves against injury to health and environmental damage, and to influence public and private decision-makers in environmental matters. The Act is also intended to promote public participation in decision-making processes of significance relating to the environment.</p> | 3   | -            | 2004-01-01     |

| Text  | Responsible | Conditions which are regulated  | No. | Last changed | Effective date |
|---|-------------|---|-----|--------------|----------------|
| <p><b>LOV 2005-6-17 nr 62: Lov om arbeidsmiljø, arbeidstid og stillingsvern m.v. (Arbeidsmiljøloven)</b></p> <p><a href="http://www.lovdatab.no/all/tl-20050617-062-001.html">http://www.lovdatab.no/all/tl-20050617-062-001.html</a></p> <p><b>Act relating to worker protection and working environment etc. [Worker Protection and Working Environment]</b></p> <p><a href="http://www.ub.uio.no/ujur/ulovdata/lov-19770204-004-eng.pdf">http://www.ub.uio.no/ujur/ulovdata/lov-19770204-004-eng.pdf</a></p> | ASD         | <p>Lovens formål er blant annet:<br/> <i>”å sikre et arbeidsmiljø som gir grunnlag for en helsefremmende og meningsfylt arbeidssituasjon, som gir full trygghet mot fysiske og psykiske skadevirkninger, og med en velferdsmessig standard som til enhver tid er i samsvar med den teknologiske og sosiale utvikling i samfunnet”.</i></p> <p>Mest relevante paragraf er:<br/> <i>4.5 Særlig om kjemisk og biologisk helsefare(utdrag)</i></p> <ul style="list-style-type: none"> <li>• Ved håndtering av kjemikalier eller biologisk materiale skal arbeidsmiljøet være tilrettelagt slik at arbeidstaker er sikret mot ulykker, helseskader og særlig ubehag. Kjemikalier og biologisk materiale skal fremstilles, pakkes, brukes og oppbevares slik at arbeidstaker ikke utsettes for helsefare.</li> <li>• Kjemikalier og biologisk materiale som kan innebære helsefare, skal ikke brukes dersom de kan erstattes med andre eller med en annen prosess som er mindre farlig for arbeidstakerne.</li> <li>• Virksomheten skal ha nødvendige rutiner og utstyr for å hindre eller motvirke helseskader på grunn av kjemikalier eller biologisk materiale.</li> <li>• Virksomheten skal føre kartotek over farlige kjemikalier og biologisk materiale.</li> </ul> <p>The main purpose of this Act is to secure the working environment which affords employees full safety from harmful physical and mental influences and which has safety, occupational health and welfare standards at any time consistent with level of technology and social development of the society.</p> | 4   | 2005-06-17   | 2006-01-01     |

## 4.2 Comments to the Acts

Regarding antifouling the Pollution Act is the most important act. The purpose of the act is to protect the outdoor environment against pollution and to reduce existing pollution, to reduce the quantity of waste and to promote better waste management. The act says that in principal it is illegal to pollute, and that you need permission for polluting activity (see paragraph 7). The County Governor (Fylkesmannen) is the pollution authority for fish farms and net service stations. They deal with the emission permits which are needed and undertake the supervision. Some of this authority is delegated to the Directorate of Fisheries (Fiskeridirektoratet).

The Product Control Act shall prevent that products cause health damage or environmental disturbances, and regulations which control single substances or mixes are founded in this act. A substitution duty, meaning a duty to exchange dangerous substances with less dangerous alternatives, was introduced 1. January 2000.

### 4.3 Regulations

| Regulations  |    | Conditions which are regulated   | No. | Last changed        | Effective date | Provisions of  |
|--|----|--|-----|---------------------|----------------|--|
| <p><b>Forskrift om begrensning av forurensning (forurensningsforskriften). FOR 2004-06-01 nr 931</b></p> <p>Hyperlink: <a href="https://lovdata.no/dokument/for/2004-06-01-931">FOR-2004-06-01-931</a> Oppdaterte lover og forskrifter fra Lovdata</p> <p><b>”Regulation relating to reduction of pollution ( The pollution regulation)”</b></p> | MD | <p><b>Kapittel 17: Utslipp av farlige stoffer til vann</b></p> <p>Formålet med kapittel 17 er å verne Fellesskapets akvatiske miljø mot forurensning, særlig forurensning som skyldes utslipp av visse persistente, giftige og bioakkumulerbare stoffer. Direktivene i EØS avtalen om utslipp av farlige stoffer til vann og grunnvann, gjelder her som forskrift (se hjemmel).</p> <p>Vedlegg viser at kobber er oppført i liste II i vedlegget. Medlemsstatene skal treffe de nødvendige tiltak for å redusere forurensning av slikt vann med farlige stoffer tilhørende familier eller grupper av stoffer oppført i liste II i vedlegget. Ved ethvert utslipp av stoffer på Liste I eller II skal det foreligge en tillatelse der utslippskravene fastsettes.</p> <p><b>Kapittel 25. Forurensning fra vask og impregnering av oppdrettsnøter<sup>8</sup></b></p> <p>Formålet med kapitel 25 er å hindre utslipp av miljøskadelige kjemikalier og å redusere forurensningsmessige ulemper fra virksomheter som rengjør, vasker eller impregnerer oppdrettsnøter.</p> <p>Kapittel 25 omfatter virksomheter som rengjør, vasker eller impregnerer hele eller deler av oppdrettsnøter. Rengjøring av not på oppdrettslokaliteten omfattes ikke av dette kapitlet.</p> | 5   | For-2004-11-30-1535 | 2004-07-01     | <p>L.13.mars 1981 nr.6 § 9 §16 §33 §49 og §51</p> <p>L.13.mars 1981 nr.6 § 9. Jf. EØS-avtalen vedlegg XX (direktiv 76/464/EØF, direktiv 82/176/EØF, direktiv 83/513/EØF, direktiv 84/156/EØF, direktiv</p> |

<sup>8</sup> See comments on page 26 under **Most important regulations for net service stations**



| Regulations  |    | Conditions which are regulated   | No. | Last changed        | Effective date | Provisions of   |
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|  |    | <ul style="list-style-type: none"> <li>• Forbud mot utslipp av miljøskadelige kjemikalier</li> <li>• Utslipp av begroingsrester som ikke inneholder miljøskadelige kjemikalier er tillatt dersom det skjer på en slik måte at forurensningen blir ubetydelig.</li> <li>• Dokumentasjonsplikt</li> <li>• Fylkesmannen er tilsynsmyndighet</li> </ul> <p style="color: red;">For virksomheter som er i drift per 1.januar 2003, tredje kapittel 25 i kraft 1.juli 2005.</p> <p>Chapter 25: The objective of the regulation in this chapter is to prevent discharge of environmental damaging chemicals and to reduce the environmental disadvantages from enterprises which clean, wash or impregnate nets used in fish farms.</p> |     |                     |                | 84/491/EØF og direktiv 86/280/EØF endret ved direktiv 88/347/EØF og direktiv 90/415/EØF) og (direktiv 80/68/EØF endret ved direktiv 91/692/EØF).  |
| <p><b>For 2004-06-01 nr.930. Forskrift om gjenvinning og behandling av avfall (avfallsforskriften).</b></p> <p>Hyperlink: <a href="http://lovdata.no/for/2004-06-01-930">http://lovdata.no/for/2004-06-01-930</a> Oppdaterte lover og forskrifter fra Lovdata</p> <p><b>“Regulation relating to recycling and treatment of waste (the waste regulation)”</b></p> | MD | <p><b>Kapittel 11. Farlig av avfall</b></p> <p>Bestemmelsene i kapittel 11 har til formål å sikre at farlig avfall tas hånd om på en slik måte at det ikke skaper forurensning eller skade på mennesker eller dyr, eller fare for dette, og å bidra til et hensiktsmessig og forsvarlig system for håndtering av farlig avfall.</p> <p>Bestemmelsene i dette kapitlet gjelder oppbevaring, levering og håndtering av farlig avfall som omfattes av § 11-4.</p> <p>§ 11-4. <i>Farlige avfallstyper som omfattes av bestemmelsene i dette kapitlet. Bestemmelsene i dette kapitlet omfatter:</i></p> <p><i>1) avfallstyper i vedlegg 1 til dette kapitlet, den europeiske avfallslisten (EAL), merket med stjerne *</i></p>        | 6   | FOR-2004-07-13-1127 | 2004-07-01     | lov 13. mars 1981 nr. 6 § 20, § 29 og § 31. Jf. EØS-avtalen vedlegg XX nr. 32a (direktiv 91/689/EØF endret ved direktiv 94/31/EF) og nr. 32aa (vedtak 2000/532/EF endret ved vedtak 2001/118/EF, vedtak 2001/119/EF og vedtak 2001/573/EF). |

| Regulations | Conditions which are regulated   | No. | Last changed | Effective date | Provisions of |
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|             | <p>2) annet avfall hvor innholdet av farlige stoffer overskrider grenseverdiene gitt i vedlegg 3</p> <p>Kobber er ikke merket med stjerne, men vil gå inn under pkt. 2, dvs. når innholdet overstiger enn viss grense er det ansett som farlig avfall.</p> <p><b>De viktigste paragrafene:</b></p> <ul style="list-style-type: none"> <li>• Forsvarlig oppbevaring mv. av farlig avfall (§ 11-5)</li> <li>• Tillatelse til håndtering av farlig avfall (§ 11-6). Håndtering av farlig avfall jf. Def. § 11-3, er forbudt dersom det ikke er innhentet tillatelse fra forurensningsmyndighetene, eller aktiviteten ikke omfattes av unntakene i § 11-7.</li> <li>• Unntak fra kravet om tillatelse (§ 11-7)</li> <li>• Leveringsplikt (§ 11-8). Virksomheter har plikt til å levere det farlige avfallet.</li> <li>• Virksomhetenes deklarasjonsplikt om avfallets innhold (§ 11-12).</li> <li>• Plikter for den som håndterer farlig avfall (§ 11-13).</li> <li>• Vedlegg 1- Den europeiske avfallslisten</li> <li>• Vedlegg 3 Kriteriene som gjør avfall til farlig avfall</li> </ul> <p><i>Del A viser egenskaper som gjør avfallet farlig, og grenseverdier for når avfallet defineres som farlig</i></p> |     |              |                |               |

| Regulations   |    | Conditions which are regulated  | No. | Last changed | Effective date | Provisions of  |
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|   |    | <p><i>avfall. Avfall hvor innholdet av farlige stoffer overskrider en eller flere av grenseverdiene, defineres som farlig avfall.</i></p> <p>The purpose of this regulation is to secure that hazardous waste is handled in such a way that it does not create pollution or harm to humans or animals, or danger for so. It should also contribute to a suitable and proper system for handling of hazardous waste. It is chapter 11, "Hazardous waste" which is relevant. Chapter 11-4: copper is not automatically seen upon as a hazardous waste, but when the limit value exceeds a certain value it is. Appendix 3 sets the limits value for when waste is seen upon as a hazardous waste. This chapter is also about discharge permit, handling of hazardous waste and duty to deliver hazardous waste.</p> |     |              |                |  |
| <p><b>FOR 2003-12-18 nr 1848: Forskrift om godkjenning av biocider og biocidprodukter (biocidforskriften).</b></p> <p><a href="http://www.lovdata.no/for/sf/md/xd-20031218-1848.html">http://www.lovdata.no/for/sf/md/xd-20031218-1848.html</a></p> <p><b>"Regulation concerning the placing of biocidal products on the market (the biocid</b></p> | MD | <p>Formålet med biociddirektivet er å forhindre uakseptable effekter på helse og miljø ved håndtering og bruk av biocidprodukter, samt harmonisere markedet for biocidprodukter i EØS-området. Biociddirektivet stiller derfor krav til at aktive stoffer og biocidprodukter skal godkjennes før innførsel, omsetning og bruk i EØS-landene.</p> <p>Produkttype 21 i forskriften er "Begroingshindrende midler"; "Produkter som brukes til bekjempelse av vekst og avleiring av forurensede organismer (mikrober og høyere plante- eller dyrearter) på fartøyer, akvakultur eller andre konstruksjoner som brukes i vann".</p>  | 7   | -            | 2004-01-01     | LOV-1976-06-11-79-§4 , LOV-1977-02-04-4-§11 , LOV-1977-02-04-4-§18 |

<sup>9</sup> Look page 29 for more details about the Biocide Directive

## Overview of laws and regulations regarding antifouling methods in fish farming

| Regulations  |     | Conditions which are regulated  | No. | Last changed                     | Effective date | Provisions of  |
|--|-----|---|-----|----------------------------------|----------------|--|
| regulation)”   |     | <p>Forskriften stiller krav til innhold i søknader som har til hensikt å få godkjent biocidet, slik at det blir del av et vedlegg til forskriften, liste I, IA eller IB, populært kalt positivlister. Produsenter eller importører av aktive substanser eller biocider er de som kan søke om en slik godkjennelse.</p> <p>Biociddirektivet og denne forskriften stiller også krav til merking ut over det som følger av Forskrift om klassifisering, merking mv. av farlige kjemikalier.</p> <p>SFT er ansvarlig myndighet for forskriften.</p> <p><b>EU's biocid direktiv har følgende definisjon av et biocid:</b><br/>         ”Aktive stoffer og preparater, som inneholder et eller flere aktive stoffer i den form, hvor de overdraes til brukeren, og som er bestemt til å kunne ødelegge, hindre, uskadeliggjøre, hindre virkning av eller på anden vis bekjempe virkningen av skadegjørende kjemisk eller biologisk” (EU-direktiv 98/8/EF, 16 Feb. 1998).<sup>9</sup></p> <p>The purpose of this regulation is to prevent unacceptable effects on health and environment through handling and use of biocid products, and to harmonise the market for biocid products in the EEA area. The Biocid regulation therefore makes demand for active substances to be accepted before they can be imported/introduced, sold or used in EAC. Product type 21 in the regulation is “Antifouling agents”.</p> |     |                                  |                |  |
| <b>FOR 1996-12-06 nr 1127:<br/>         Forskrift om systematisk helse-, miljø- og sikkerhetsarbeid i virksomheter</b> | ASD | Gjennom krav om systematisk gjennomføring av tiltak, skal denne forskrift fremme et forbedringsarbeid i virksomhetene innen; arbeidsmiljø og sikkerhet, forebygging av helseskade eller miljøforstyrrelser fra produkter eller forbrukertjenester, vern av det ytre miljø mot forurensning og en bedre  | 8   | FOR-2005-01-28-51 fra 2005-02-01 | 1997-01-01     | LOV-1977-02-04-4-§16a , LOV-1977-02-04-4-§2 , LOV-1971-05-21-47-§14 , LOV-1974-06-14-39-§14 , LOV-1987-06-05-26- |

## Overview of laws and regulations regarding antifouling methods in fish farming

| Regulations  |     | Conditions which are regulated  | No. | Last changed | Effective date | Provisions of   |
|--|-----|---|-----|--------------|----------------|---|
| <p><b>(Interkontrollforskriften).</b></p> <p>Hyperlink: <a href="http://www.arbeidstilsynet.no/regelverk/forskrifter/full544a.html">FOR-1996-12-06-1127</a> Forskrift om systematisk helse-, miljø- og sikkerhetsarbeid i virksomheter (Internkontrollforskriften).</p> <p><b>Regulations relating to systematic health, environmental and safety activities in enterprises [Internal control regulations</b></p> <p><a href="http://www.arbeidstilsynet.no/regelverk/forskrifter/full544a.html">http://www.arbeidstilsynet.no/regelverk/forskrifter/full544a.html</a></p> |     | <p>behandling av avfall, slik at målene i helse-, miljø- og sikkerhetslovgivningen oppnås.</p> <p>Through requirements as to systematic implementation of measures, these regulations shall promote efforts to improve conditions in enterprises in regard to</p> <ul style="list-style-type: none"> <li>• the working environment and safety</li> <li>• prevention of damage to health or disturbances to the environment from products or consumer services</li> <li>• protection of the external environment against pollution and improved treatment of waste</li> </ul> <p>So as to ensure that the objectives of the health, environmental and safety legislation are achieved.</p> |     |              |                | <p>§4 , LOV-1981-03-13-6-§52b , LOV-1976-06-11-79-§8 , LOV-1953-07-17-9-§41 , LOV-1953-07-17-9-§48 , LOV-1929-05-24-4-§3 , LOV-1929-05-24-4-§9 , LOV-1993-04-02-38-§17 , LOV-2002-06-14-20-§8 , LOV-2000-05-12-36-§11</p> |
| <p><b>FOR 2004-03-19 nr 537: Forskrift om Internkontroll for å oppfylle akvakulturlovgivningen (IK-Akvakultur).</b></p> <p>Hyperlink: <a href="http://lovdata.no/for/2004-03-19-537">FOR-2004-03-19-537</a> Oppdaterte lover og forskrifter fra Lovdata</p>  | FKD | <p>Denne forskriften skal sikre en systematisk gjennomføring av tiltak for å oppfylle akvakulturlovgivningen.</p> <p>Forskriften gjelder blant annet for virksomheter som omfattes av lov 14. juni 1985 nr. 68 om oppdrett av fisk, skalldyr m.v. (oppdrettsloven)</p> <p>Den som er ansvarlig for virksomheten skal sørge for at det innføres og utøves internkontroll i virksomheten, og at dette gjøres i samarbeid med arbeidstakerne.</p> <p>Ikke ting ift. impregnering av nøter og avfall, men gjelder generelt.</p> <p>This regulation shall secure a systematic accomplishment of measures to fulfil the aquaculture legislation. Nothing</p>                                    | 9   | -            | 2005-01-01     | <p>LOV-1985-06-14-68-§17 , LOV-2000-12-21-118-§18 , LOV-2003-12-19-124-§5 , FOR-2003-12-19-1790 , LOV-1974-12-20-73-§30</p>   |

| Regulations   |     | Conditions which are regulated  | No. | Last changed | Effective date | Provisions of |
|---|-----|---|-----|--------------|----------------|---------------|
|   |     | specifically related to anti-fouling measures or copper, but applies generally.   |     |              |                |               |
| <p><b>FOR 2004-12-22 nr 1785:<br/>Forskrift om drift av<br/>akvakulturanlegg<br/>(akvakulturdriftsforskriften)</b></p> <p>Hyperlink: <a href="#">FOR 2004-12-22 nr 1785:<br/>Forskrift om drift av akvakulturanlegg<br/>(akvakulturdriftsforskriften).</a></p> <p><b>“Regulation relating to<br/>management of aquaculture<br/>sites”</b></p> | FKD | <p>Formålet med denne forskriften er å bidra til at akvakulturnæringen kan få en bærekraftig utvikling og bli en lønnsom, konkurransedyktig og livskraftig kystnæring. Formålet er også å sikre god helse hos akvakulturdyr og ivareta god velferd hos fisk.</p> <p>§13 Bruk av legemidler og kjemikalier: Ved bruk av legemidler og kjemikalier skal det vises særlig aktsomhet for å unngå at midlene slipper ut i det omkringliggende miljø.</p> <p>§20 Vannkvalitet i akvakulturanlegg i sjø: Installasjoner i sjø skal utformes og vedlikeholdes på en måte som sikrer god gjennomstrømning av rent vann.</p> <p>§27:Kjemiske substanser og hormoner. Fisk skal ikke gis noen former for kjemiske substanser, herunder salt, eller behandles med hormoner, dersom dette kan ha negativ innvirkning på fiskevelferden. Bruk av kjemiske substanser og hormoner er tillatt dersom dette er nødvendig av dyrehelsemessige grunner.</p> <p>§29 Miljøovervåkning. Det skal foretas miljøovervåkning av lokaliteter i sjøvann med produksjon av fisk, blant annet en trendovervåkning av bunnforholdene under anlegget.</p> <p>§37 Journalføring på lokalitetsnivå av blant annet kjemikalieforbruk</p> <p>The purpose of this regulation is to contribute so that the Aquaculture industry can have a sustainable development and be a profitable, competitive and vigorous industry. The purpose is also to ensure good health for the aquaculture</p> | 10  | -            | 2005-01-01     | See folder    |

## Overview of laws and regulations regarding antifouling methods in fish farming

| Regulations   |     | Conditions which are regulated  | No. | Last changed        | Effective date            | Provisions of   |
|---|-----|---|-----|---------------------|---------------------------|---|
|   |     | animals and safeguard good welfare for fish.<br><br>Deals among others with: use of drugs and chemicals (§13), water quality in aquaculture sites (§20), chemical substances or hormones given to fish (§27), environmental monitoring of sites (§29), and sea bed substrates (§37).  |     |                     |                           |   |
| <b>FOR 1997-02-20 nr 194:<br/>Forskrift om rengjøring og desinfeksjon av akvakulturanlegg m.v.</b><br><br>Hyperlink:<dato> <a href="#">FOR-1997-02-20-194</a> </dato> <a href="#">Oppdaterte lover og forskrifter fra Lovdata</a><br><br><b>“Regulation relating to cleaning and disinfection of aquaculture sites etc”</b> | LMD | Formålet med denne forskrift er å forebygge, begrense eller utrydde smittsomme sykdommer hos akvatiske organismer gjennom korrekt bruk av kjemiske desinfeksjonsmidler med godkjent kvalitet.<br><br>Forskriften omfatter rengjøring, og teknisk bruk av kjemiske desinfeksjonsmidler i virksomheter som driver akvakultur, transport eller karantenering av akvatiske organismer, samt godkjenning av kjemiske desinfeksjonsmidler til samme formål. <ul style="list-style-type: none"> <li>• Godkjenning av kjemiske desinfeksjonsmidler skjer etter søknad til Statens legemiddelverk, §4</li> <li>• Gjennomføring av rengjøring og desinfeksjon, §8 beskriver hvordan dette skal gjøres for merder, notposer og andre flytende innretninger</li> </ul> The purpose of this regulation is to prevent, limit or exterminate infective diseases in aquatic animals through correct use of chemical disinfections with accepted quality. The regulation includes cleaning and technical use of chemical disinfections in industries which perform aquaculture, transport or quarantine of aquatic animals and approval of chemical disinfectants for the same purpose. §8 describe how cleaning and disinfection should be done for net | 11  | FOR-2004-07-08-1116 | 1997-02-20,<br>2002-02-15 | LOV-2003-12-19-124-§9 , LOV-2003-12-19-124-§33 , LOV-2003-12-19-124-§36 , FOR-2003-12-19-1790 , FOR-2004-07-07-1112 |

| Regulations  |               | Conditions which are regulated   | No. | Last changed       | Effective date                     | Provisions of  |
|--|---------------|--|-----|--------------------|------------------------------------|--|
|  |               | cages and other floating installations.  |     |                    |                                    |  |
| <b>FOR-2003-07-04-951 Forskrift om gjødselvarer mv. av organisk opphav.</b><br><br>Hyperlink: <a href="http://www.lovdata.no/cgi-wift/ldles?doc=/sf/sf-20030704-0951.html">http://www.lovdata.no/cgi-wift/ldles?doc=/sf/sf-20030704-0951.html</a><br><br><b>”Regulation relating to fertilizers etc. of organic origin.”</b> | LMD / MD/ HOD | <p><i>Formålet med denne forskriften er å sikre tilfredsstillende kvalitet på produkter som omfattes av forskriften, forebygge forurensingsmessige, helsemessige og hygieniske ulemper ved tilvirkning, lagring og bruk av gjødselvarer, mv. av organisk opphav og legge til rette for at disse produkter kan utnyttes som en ressurs. Forskriften skal også bidra til en miljøforsvarlig forvaltning av jordsmonnet og ivareta hensynet til biologisk mangfold.</i></p> <p><b>§ 2. Virkeområde</b> Forskriften omfatter gjødselvarer av organisk opphav, herunder husdyrgjødsel, silopressaft, avløpslam, vannverksslam, kompostprodukter og annen organisk gjødsel, organisk-mineralsk gjødsel, organiske og uorganiske dyrkingsmedier, jordforbedringsmidler, jorddekkingsmidler, anaerobt omsatt biomasse, forbrenningsprodukter, komposteringspreparater og vekststoffer med mikroorganismer mv.</p> <p>Bestemmelser om tilvirkning Del II</p> <ul style="list-style-type: none"> <li>§10 Kvalitetskrav. 1) angir maksimalgrenser for innhold av tungmetaller mg/kg tørrstoff. Maks tillatte kobberinnhold er hhv. 50, 150, 650 og 1000 i kvalitetsklasse 0, I, II og III</li> <li>7) Råvarer som inngår i produkter i kvalitetsklassene 0, I og II, jf. nr. 1, må ikke overskride innholdet av tungmetaller i klasse II. Råvarer som inngår i kvalitetsklasse III må ikke overskride innholdet av tungmetaller i klasse III.a</li> </ul> | 12  | FOR-2005-08-26-927 | 2003-07-20, 2005-01-01, 2008-01-01 | <a href="#">LOV-1995-05-12-23-§3</a> , <a href="#">LOV-1995-05-12-23-§11</a> , <a href="#">LOV-1981-03-13-6-§9</a> , <a href="#">LOV-1982-11-19-66-§4a-1</a> , <a href="#">LOV-2003-12-19-124-§7</a> , <a href="#">LOV-2003-12-19-124-§33</a> , <a href="#">LOV-2003-12-19-124-§36</a> , <a href="#">FOR-2003-12-19-1790</a> |



## Overview of laws and regulations regarding antifouling methods in fish farming

| Regulations  |            | Conditions which are regulated   | No. | Last changed       | Effective date            | Provisions of  |
|--|------------|--|-----|--------------------|---------------------------|--|
|  |            | Bestemmelser om lagring og bruk (Del III) <ul style="list-style-type: none"> <li>§26 <i>Jordkvalitetskriterier (tungmetaller)</i><br/>               Jord som skal tilføres produkter som klassifiseres i kvalitetsklasse I og II, jf. § 10 nr. 1, må ikke ha innhold av tungmetaller som overstiger en satt grenseverdi. For kobber er denne maksimumsgrensen satt til 50 mg/kg TS for dyrka jord.</li> </ul> <p>This regulation shall prevent environmental, health and hygienic disadvantages caused by preparation, storage and use of fertilizers etc. of organic origin and arrange so these products can be used as a resource. Part II gives a maximal limit for the content of heavy metals, max. allowed content of Copper is respectively 50, 150, 650 or 1000 mg/kg TS in quality grad 0, I, II and III. Also set limits for raw materials going into products and soil.</p> |     |                    |                           |  |
| <b>FOR-2002-07-16-1139 :<br/>           Forskrift om klassifisering,<br/>           merking mv. av farlige<br/>           kjemikalier.</b><br><br><a href="http://www.lovdatab.no/cgi-wift/wifildles?doc=/usr/www/lovdatab/for/sf/as/as-20020716-1139.html&amp;kort+.+titt=klassifisering+.+merking&amp;">http://www.lovdatab.no/cgi-wift/wifildles?doc=/usr/www/lovdatab/for/sf/as/as-20020716-1139.html&amp;kort+.+titt=klassifisering+.+merking&amp;</a><br><br><b>”Regulation relating to<br/>           classification, labelling etc. of</b> | MD<br>/ASD | Denne forskriften gjelder klassifisering, merking, emballering og deklarerer av farlige kjemikalier som importeres, produseres og/eller omsettes i Norge.<br><br>Enhver som produserer, importerer og/eller omsetter farlige kjemikalier for yrkesmessig eller privat bruk, skal sørge for at forskriftens krav oppfylles.<br><br>Informasjonsplikt overfor myndighetene og overfor senere omsetningsledd<br><br>Krav til emballering, merking og deklarasjonsplikt.<br><br><i>Stoffdirektivet (67/548/EØF) og stoffblandingsdirektivet (88/379/EF) med senere endringer og tekniske tilpasninger er i</i>   | 13  | FOR-2005-07-01-782 | 2002-07-30,<br>2004-07-30 | <a href="#">LOV-1977-02-04-4-§18</a> , <a href="#">LOV-1977-02-04-4-§74</a> , <a href="#">LOV-1976-06-11-79-§4</a> , <a href="#">LOV-2002-06-14-20-§27</a> , <a href="#">FOR-1986-05-16-1094</a> , <a href="#">FOR-2003-09-01-1161</a> |

| Regulations  |     | Conditions which are regulated  | No. | Last changed        | Effective date        | Provisions of  |
|--|-----|---|-----|---------------------|-----------------------|--|
| <b>hazardous chemicals”</b><br><br>Gjelder for produsenter/omsetter av stoff   |     | <p>henhold til EØS-avtalen implementert i norsk regelverk gjennom denne forskriften. Stofflisten er en del av denne forskriften og inneholder informasjon om ca. 3000 stoffer. Kobber og kobberforbindelser er med på Stofflisten. Farlige stoffer skal merkes ihht. bestemmelsene gitt i stofflisten.</p> <p>This regulation is about classification, labelling, packaging and declaration of hazardous chemicals which is imported, produced and/or sold in Norway. Says something about your duty to inform the government and customers. Only applicable for producers or converter of substances.</p>                          |     |                     |                       |  |
| <b>FOR 2001-04-30 nr 443: Forskrift om vern mot eksponering for kjemikalier på arbeidsplassen (Kjemikalieforskriften).</b><br><br>Hyperlink: <a href="http://www.lovdatab.no/cgi-wift/ldles?doc=/sf/sf/sf-20010430-0443.html">http://www.lovdatab.no/cgi-wift/ldles?doc=/sf/sf/sf-20010430-0443.html</a><br><br><b>“Regulation for protection against exposure to chemicals at the workplace (the chemical regulation).”</b> | ASD | <p>Forskriften skal sikre at arbeidstakernes sikkerhet og helse beskyttes mot fare som oppstår eller kan oppstå på grunn av kjemikalier i virksomheten.</p> <p>Generelt om kjemikalier, sier blant annet noe om risikovurdering, informasjon og opplæring, arbeidsgivers merkeplikt, håndtering og oppbevaring av kjemikalier, samt ulykkes beredskap.</p> <p>The regulation shall ensure that the workers security and health are protected against dangers which arise or can arise because of chemicals in the enterprise. General about chemicals, risk assessment, information, employers duty of labelling, handling etc.</p> | 14  | FOR-2005-01-25-48   | 2001-05-05            | LOV-1977-02-04-4-§2 , LOV-1977-02-04-4-§7 , LOV-1977-02-04-4-§8 , LOV-1977-02-04-4-§9 , LOV-1977-02-04-4-§11 , LOV-1977-02-04-4-§12 , LOV-1977-02-04-4-§14 |
| <b>FOR 2000-04-14 nr 412: Forskrift om oppbygging og bruk av stoffkartotek for helsefarlige stoffer i virksomheter</b>   | ASD | <p>Gjelder for arbeidsgivere i virksomheter som fremstiller, pakker, bruker eller oppbevarer helsefarlige stoffer.</p> <p>Generelt om stoffkartotek.</p>  | 15  | FOR-2003-12-08-1458 | 2000-07-01,2001-07-01 | LOV-1977-02-04-4-§11 , LOV-1977-02-04-4-§14 , LOV-1971-05-21-47-§11A , LOV-1974-06-14-39-  |

| Regulations  |     | Conditions which are regulated  | No. | Last changed      | Effective date | Provisions of   |
|--|-----|---|-----|-------------------|----------------|---|
| <p><b>(Stoffkartotekforskriften).</b></p> <p>Hyperlink: <a href="http://www.lovdatabasen.no/cgi-wift/ldles?doc=/sf/sf/sf-20000414-0412.html">http://www.lovdatabasen.no/cgi-wift/ldles?doc=/sf/sf/sf-20000414-0412.html</a></p> <p><b>”Regulation relating to structure and use of records of substances and products for health risky industries.”</b></p>  |     | <p>This regulation applies for industries which produce, pack, uses or holds health dangerous chemicals. Generally about the used of “Records of substances and products”</p>   |     |                   |                | <p>§11A , LOV-2002-06-14-20-§27 , LOV-2002-06-14-20-§44 , FOR-2002-05-23nr 770, FOR-2002-06-26-728</p>                                |
| <p><b>FOR 2004-06-01 nr 922: Forskrift om begrensning i bruk av helse- og miljøfarlige kjemikalier og andre produkter (produktforskriften).</b></p> <p>Hyperlink: <a href="http://www.lovdatabasen.no/cgi-wift/ldles?doc=/sf/sf/sf-20040601-0922.html">http://www.lovdatabasen.no/cgi-wift/ldles?doc=/sf/sf/sf-20040601-0922.html</a></p> <p><b>” Regulation relating to restrictions on the marketing and use of certain dangerous substances and preparations (the restriction regulation).”</b></p> | ASD | <p>Formålet med forskriften er å forebygge at enkelte skadelige stoff eller stoffblandinger medfører helseskade eller miljøforstyrrelse</p> <p>§2.8 Organiske tinnforbindelser<br/>Det er forbudt å produsere, importere, eksportere, omsette og bruke stoff eller stoffblandinger som inneholder tributyltinn – og trifenylytinnforbindelser.</p> <p>Kommentar: Kobber er ikke med, men viktig å vite hvilke stoff som er med her når utvikling av nye løsninger planlegges.</p> <p>The purpose of this act is to prevent that certain harmful substance or compounds leads to health damage or environmental disturbances. Copper is not included among these substances, but it is important to know which substances which are included when you try to develop new substances for anti fouling measures.</p> <p>Organic tin compounds<br/>It is illegal to produce, import, export, sell or use substances</p> | 16  | FOR-2005-01-24-46 | 2004-07-01     | <p>LOV-1903-06-09-7-§114 , FOR-1979-10-12-1 , LOV-1976-06-11-79-§4 , LOV-1976-06-11-79-§8 , FOR-1977-08-05-2 , FOR-1990-09-07-730</p> |

| Regulations   |     | Conditions which are regulated  | No. | Last changed                       | Effective date | Provisions of  |
|---|-----|---|-----|------------------------------------|----------------|--|
|   |     | or substance mixtures which contains tributyltin – and triphenyltin compounds.  |     |                                    |                |  |
| <b>FOR 1996-07-01 nr 715:<br/>Forskrift om forhåndsmelding av nye kjemiske stoffer.</b><br><br><b>Kun for helt nye stoffer</b><br><br><a href="http://www.lovdata.no/cgi-wift/ldles?doc=/sf/sf/sf-19960701-0715.html">http://www.lovdata.no/cgi-wift/ldles?doc=/sf/sf/sf-19960701-0715.html</a><br><br><b>”Regulation relating to prior notice of new chemicals.”</b> | ASD | <p>Formålet med forskriften er å skaffe opplysninger om nye kjemiske stoffers helse- og miljøvirkninger og vurdere om stoffene representerer noen risiko <i>før</i> stoffene tas i bruk. Forhåndsmeldingen innebærer at stoffene skal testes og vurderes for en rekke helse- og miljøfarlige egenskaper</p> <p>På grunnlag av denne informasjonen vil miljømyndighetene kunne hindre at nye svært betenkelige helse- og miljøfarlige kjemiske stoffer kommer på markedet i EØS-området. Det er ikke tillatt å omsette fra produksjon eller importere et nytt stoff til Norge uten at tillatelse fra SFT foreligger.</p> <p><b>Kommentar:</b></p> <p><b>Dette vil gjelde stoffer som i dag ikke er markedsført innenfor EU i det hele tatt. Eksempler kan være stoffer som i dag er i bruk i eksempelvis Japan eller USA.</b></p> <p>The regulation says what information you need to provide about the chemicals impact on health and environment before they can be used /approved. Prior notice implies that the chemical shall be tested and judged for a series of health- and environment dangerous characteristics. This regulation only applies for new chemicals which are not in use within EU today, eg. Chemicals which today is used in the USA or Japan.</p> | 17  | FOR-2001-12-19-1662 fra 2002-01-01 | 1996-07-01     | LOV-1976-06-11-79-§4 , LOV-1976-06-11-79-§8a , LOV-1977-02-04-4-§18<br><br>Forskriften er vedtatt i henhold til EØS-avtalen, jamfør Rådskonklusjon 67/548/EØF med siste endring i Rådskonklusjon 92/32/EØF, Kommissjonsdirektiv v 93/105/EØF og Kommissjonsdirektiv v 93/67/EØF. |
| <b>FOR 1995-05-04 nr. 460.<br/>Forskrift om vurdering og kontroll av eksisterende stoffer</b><br><br><a href="http://www.lovdata.no/cgi-">http://www.lovdata.no/cgi-</a>  | MD  | <i>Denne forordning får anvendelse på: a)innsamling, spredning og tilgjengelighet av opplysninger om eksisterende stoffer b) vurdering av eksisterende stoffers risikoer for mennesker, herunder arbeidstakere og forbrukere, og for miljø, for å sikre bedre håndtering av disse risikoene innenfor rammen av EØS-</i>   | 18  | FOR-2003-03-14-340                 | 1995-05-04     | LOV-1981-03-13-6-§49, LOV-1981-03-13-6-§51, LOV-1976-06-11-79-§5   |

| Regulations  | Conditions which are regulated  | No. | Last changed | Effective date | Provisions of |
|--|---|-----|--------------|----------------|---------------|
| <p><a href="http://wift/ldles?doc=/sf/sf/sf-19950504-0460.html">wift/ldles?doc=/sf/sf/sf-19950504-0460.html</a></p> <p>Gjelder kun produsenter og importør av kjemiske stoffer</p> <p><b>”Regulation relating to evaluation and control of the risks of existing chemicals.”</b></p> | <p><i>bestemmelsene</i></p> <p><i>Del 1 Systematisk oversending og oppretting av lister over prioriterte stoffer.</i> Importører og produsenter av stoffer på prioriteringslisten har ansvar for å sende inn opplysninger om stoffets navn, mengder, klassifisering etc til Kommisjonen. Avhengig av hvilke mengder som produseres/importeres så skal ulike ting rapporteres (Artikkel 3 og 4).</p> <p><i>Del 2 Risikovurdering.</i> EØS statene får delegert ansvar for ulike stoffer.</p> <p>This regulation applies for a) collecting, spreading and availability of information about existing substances b) evaluation of existing substances risk for humans and for the environment, in order to secure a better handling of these risks within the frame of the EEC agreement. Part 1.Importers and producers of chemical substances on the Priority list are obliged to report on names, amounts, classification etc. to the Commission. Part 2. Responsibility for risk assessments are delegated between the EEC states.</p> |     |              |                |               |

#### 4.4 Comments to the Regulations

##### New solutions

According to SFT (Norwegian Pollution Control Authority) the most important things to allow for when you look for new alternative solutions (chemicals) for anti-fouling measures to replace copper are: the “Regulation relating to classification, labelling etc. of hazardous chemicals” (FOR-2002-07-16-1139 : Forskrift om klassifisering, merking mv. av farlige kjemikalier) , Stofflisten (given out by SFT) and Biocidforskriften (see more details on next page). Stofflisten is harmonised with EU Council Directive 67/548/EEC, “Classification, packaging and labelling of dangerous substances in the European Union”, and give an overview of about 3000 substances, copper included. These are substances which you should avoid when you search for new solutions, since there is a goal to reduce the emission of them.

SFT points out certain groups of chemical one should show especial attention:

- PFOS (perfluorooctanyl sulfonate) which belongs to a large group of chemical substances called perfluorinated alcyated substances (PFAS). This is substances which are about to be reduced and groups of substances to treat especially careful.
- Phthalt (Softeners). Mainly used as softeners in plastics, especially in PVC. These are substances about to be reduced and prioritised to be phased out.

### **Biocide regulation**

A biocidal product contains active substances (biocides) which contribute to fight unwanted substances (in e.g. fouling). This definition implies all chemical substances used to fight fouling of aquaculture nets and construction (antifouling products). The Norwegian biocide regulation came into force 1.january 2004 (FOR 2003-12-18 nr 1848: Forskrift om godkjenning av biocider og biocidprodukter). The regulation is the introduction of the EU Council Directive 98/8/EC concerning the placing of biocidal products on the market. The biocide regulation is adopted to increase the protection of human health and the environment when biocidal products are handled and used. The regulation demands an approval of all active substances and biocidal products before import, sales and use in EEA countries (including Norway). There have been big differences between EEA countries when it comes to the regulation of biocidal products. The harmonised rules in the biocid regulation therefore contribute to simplify the trade with biocidal products between the different EEA countries.

The biocide regulation includes 23 product types, divided in four main categories;1) disinfectants and common biocide products,2) preserving agents 3) pest control and 4) other biocide products. Product type number 21- “Antifouling products” in category four is the relevant product type for aquaculture. The definition of product type 21-Antifouling Products is: “Products used for fight against growth and deposition/sediment of fouling organism (microbes or higher plant and animal specie) on vessels, aquaculture equipment or other constructions used in water”. Based on this definition we understand that all chemicals used as an antifouling product will need to be approved as a biocide.

The biocide regulation clearly states how an application of approval of an active substance (biocide) should be done. It is extensive demands for documentation including: physical and chemical structure of product, the intended manner and area of use for the product, its effect, toxicological data, eco toxicological data, necessary preventive measures to protect humans, animals and environment etc. (more details read the regulation). The extent of necessary documentation will among other things depend on whether it is a new or existing substance, and whether its use as an antifouling product has been documented before. When you seek for new substances it is therefore important to know if you have a

new<sup>10</sup> (not existing) or already existing<sup>11</sup> chemical substance. It is also important to know whether it has been used in Norway or other European countries before, whether it has been used in the environment you want to use it in before (the sea) and whether it has been used as an antifouling product before. Dependant on the answers to these questions, the possibility and the necessary procedure/documentations needed to get the substance approved for use as an antifouling substance in aquaculture will vary a lot. The regulation also states the costs relating to getting a biocidal product approved. It is the producer of the biocidal product or the importer of the product to an EEA country which is responsible for applying. In Norway Statens Forurensningstilsyn (SFT), is the Competent Authority and where you should seek help.

The process in relation to approval goes like this (simplified): the individual active substances (biocides) shall be evaluated in EU, the decision are made in the Community and the approved substances are registered in separately Appendixes to the biocide regulation (I, IA or IB according to type). These appendixes are popularly called “the Positive lists”. Further must the biocidal product (where the approved active substances are included) also be approved before import, trade and use. The products must be approved in each EEA country where they are wanted marketed.

Per March 2005 EU’s appendixes (“Positive lists”) are empty. The first rounds of evaluation of substances take place today, but in this round “Product type 21 – Antifouling products”, which is the relevant product type for aquaculture, are not included. They will at the earliest be included in an evaluation round which starts in 2006, this implies that they at the earliest eventually can be included in the positive list in 2007/2008 and then at the earliest be considered in Norway in year 2009. Regarding Copper it should be mentioned that Product Type 8-Wood preservatives (“treimpregneringsmidler”), is included in the evaluation round going in EU right now. The conclusions which will come for the use of “Wood preservatives” will to a certain extent give a pointer of how similar substances in Product type 21 “Antifouling products” will be evaluated, but it can not say anything about the risk related to the concrete use of an antifouling substance in water.

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<sup>10</sup>Definition of a new chemical is according to “FOR 1996-07-01 nr 715: Forskrift om forhåndsmelding av nye kjemiske stoffer” a substance which is not part of the EINECS list in EU. *Nytt kjemisk stoff*: Et kjemisk stoff som ikke er oppført i EUs liste EINECS.

<sup>11</sup> Existing substances: The EU Commission has so far prepared 4 lists of prioritised substances which there shall be prepared thorough health- and environment risk evaluations for. The lists were published 26.05.1994, 28.09.1995, 28.01.1997 and 25.10.2000. Look in : “FOR 1995-05-04 nr 460: Forskrift om vurdering og kontroll av risikoer ved eksisterende stoffer”.

### **Most important regulations for net service stations**

The two most important Norwegian regulations for the net service stations, which are washing and cleaning aquaculture nets, are the "Regulation relating to reduction of pollution"(FOR-2004-06-01-931, Forurensningsforskriften)"- chapter 17 and 25 and the "Regulation relating to recycling and treatment of waste"(FOR-2004-06-01-930, Avfallsforskriften)- chapter 11. This last mentioned regulation impose the net service stations to clean the waste, in practice this implies a zero outlet limit on copper. This is the most concrete regulation we see regarding antifouling. Also regulations relating to storage, use and handling of chemicals are important.

In Norway a new regulation is in the pipeline, a regulation which will be named the "Industry regulation" ("Industriforskriften"). According to The Norwegian Pollution Control Authority (SFT) this will be a regulation which will regulate all industry enterprises that do not have a discharge permit. This regulation will have a general part which will apply for all; this part will set maximum limits for noise, dust and smell. The regulation will also have an industry sector specific part, where special regulations for chemical in different sectors will be placed. Part 7 from Forurensningsforskriften (FOR-2004-06-01-931), which includes Chapter 25 "Forurensning fra vask og impregnering av oppdrettsnøter" is planned to be moved to this new "Industriforskrift". According to SFT no changes in the text is planned. At time of writing (November 2005) it is not possible to say when this will happen.

### **New framework for chemical regulations**

It should be mentioned that EU are working on total change of their set of chemical regulations and a suggested new set of regulations exists per 29.10.2003 called REACH ((**R**egistration, **E**valuation and **A**uthorisation of **C**hemicals"). This REACH suggestion is expect to be amended in April 2007.

The purpose of REACH is to get more information about a larger number of substances and to limit the use of the most harmful substances in order to give humans and the environment a better protection. In addition the purpose is to give the chemical industry in EEA a larger responsibility for their chemicals and for that the industry shall be able to maintain and improve their competitiveness. This means that existing acts and regulations will be changed with the introduction of a new chemical framework, mostly in regard to whom has the responsibility, the public authorities or the industry. REACH will not affect the Biocid regulation and we can not see that it will be especially important in relation to antifouling products.



## 5. Important EU-directives

Here we present the most important EU Council Directives which influence the anti-fouling measures within aquaculture.

As a background it should be mentioned that a Council Directive describes final goals EU want to achieve. If the European Commission wants to implement new policies, but thinks it is indifferent how it is implemented, they make a Directive. It is then handed over to each country whether national legislation has to be adjusted in order to achieve these goals. In Norway we see that most of the EU Directives, which we are committed to implement through the EEC-agreement, are implemented through Regulations. In the table below we refer to the most important regulations where the Directives are implemented.

| Text   | Conditions which are regulated   | In Norwegian acts and regulations  |
|--|--|--|
| <b>Council Directive 96/61/EC of 24 September 1996 concerning integrated pollution prevention and control</b>        | Read in the relevant Norwegian acts and regulation mentioned in the column to the right.   | Forurensningsloven.<br><br>"Forskrift om begrensnng av forurensning (forurensningsforskriften)" chapter 17 and 25. |
| <b>Council Directive 91/689/EEC of 12 December 1991 on hazardous waste</b><br><br><b>"Direktiv om farlig avfall"</b> | The objectives of the Directive are to ensure that, in the course of collection, transport and temporary storage, waste is properly packaged and labelled.<br><br>Copper is not defined as hazardous waste before the content of the active substance exceeds a certain limit.   | Forskrift om gjenvinning og behandling av avfall (avfallsforskriften). Kapittel 11.<br>Farlig av avfall            |
| <b>Council Directive 75/442/EEC of 15 July 1975 on waste</b><br><br><b>"Direktiv om avfall"</b>                      | The Directive shall ensure that waste is disposed of without endangering human health and without harming the environment, and in particular: <ul style="list-style-type: none"> <li>- without risk to water, air, soil and plants and animals</li> <li>- without causing a nuisance through noise or odours</li> <li>- without adversely affecting the countryside or places of special interest</li> </ul> | Forskrift om gjenvinning og behandling av avfall (avfallsforskriften).   |

| Text   | Conditions which are regulated  | In Norwegian acts and regulations  |
|--|---|--|
| <b>Council directive 74/464/EEC of 4 May 1976 on pollution caused by certain dangerous substances discharged into the aquatic environment of the Community</b>   | <p>The Directive establishes a List I and List II of selected substances. Pollution through the discharge of the various dangerous substances within List I must be eliminated, while it is necessary to reduce water pollution caused by substances within List II.</p> <p>List II includes Copper.</p>  | <p>Forurensningsloven.</p> <p>”Forskrift om begrensning av forurensning (forurensningsforskriften)” chapter 17 and 25.</p>   |
| <b>Council Directive 90/313/EEC of 7 June 1990 on the freedom of access to information on the environment</b>  | <p>Look above in the relevant Norwegian acts and regulations.</p>   | <p>Miljøinformasjonsloven</p>  |
| <b>Council Directive 98/8/EC of 16 February 1998 concerning the placing of biocidal products on the market</b>   | <p>Read in the relevant Norwegian acts and regulation mentioned in the column to the right.</p>   | <p>Forskrift om godkjenning av biocider og biocidprodukter (biocidforskriften).</p>  |
| <b>Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy</b><br><br><b>“Vanndirektivet”</b> | <p><i>The purpose of the Directive is to establish a framework for the protection of inland surface waters, transitional waters, coastal waters and ground water.</i> Main purpose to ensure that the countries protect and if necessary improve the water quality. Article 16: Strategies against pollution of water.</p> <p>Among other thing it shall: ensure the reduction of discharges, emissions of priority hazardous substances. Have prioritized 33 substances, Copper is not among these.</p> <p>Direktivets krav og mål skal være nådd innen 2015. Norge er forpliktet til å innføre direktivet på grunn av EØS-samarbeidet. Rammedirektivet danner en overbygning over underliggende EU-direktiv som har betydning for vannforvaltningen. Hovedprinsippet i rammedirektivet for vann er at ferskvann, kystvann og grunnvann skal ha god tilstand. Innen 2015 skal mengde vann og</p> | <p>Comment:</p> <p>A draft for an “accomplishment regulation” with a suggestion to divide the country in water regions will soon be sent out as a consultation paper. Will be implemented in many existing regulations, among others in the “Plan og bygningsloven”.</p> |

| Text   | Conditions which are regulated   | In Norwegian acts and regulations   |
|--|--|---|
|  | vannforekomstens fysiske utforming, kjemiske og biologiske forhold ikke avvike for mye fra de forhold som ville ha eksistert dersom vannforekomsten ikke hadde vært påvirket av menneskelige aktiviteter.                    |   |
| <b>Council Directive 76/769/EEC of 27 July 1976 on the approximation of the laws, regulations and administrative provisions of the Member States relating to restrictions on the marketing and use of certain dangerous substances and preparations. (1976)</b><br><br><b>”Begrensningsdirektivet”</b> | Read in the relevant Norwegian acts and regulation mentioned in the column to the right.<br><br>Copper is not part of the Directive, but important to know which substances are when you work with new antifouling measures. | Forskrift om begrensning i bruk av helse- og miljøfarlige kjemikalier og andre produkter (produktforskriften).  |
| <b>Directive 67/548/EEC on the classification, packaging and labelling of dangerous substances, as amended by Directive 92/32/EEC</b><br><br><b>“Stoffdirektivet”</b>  | Read in the relevant Norwegian acts and regulation mentioned in the column to the right.   | <b>”Forskrift om forhåndsmelding av nye kjemiske stoffer”</b><br><br>Er vedtatt i henhold til EØS-avtalen, jamfør Rådskdirektiv 67/548/EØF med siste endring i Rådskdirektiv 92/32/EØF, Kommissjonsdirektiv 93/105/EØF og Kommissjonsdirektiv 93/67/EØF. Forskriften er hjemlet i <a href="#">produktkontrollloven</a> og <a href="#">arbeidsmiljøloven</a> . |
| <b>Council Directive 88/379/EEC on the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations</b>   | Read in the relevant Norwegian acts and regulation mentioned in the column to the right.   | Stoffdirektivet (67/548/EØF) og stoffblandingsdirektivet (88/379/EF) med senere endringer og tekniske tilpasninger er i henhold til EØS-avtalen implementert i norsk regelverk i <a href="#">forskrift om klassifisering, merking mv. av farlige kjemikalier</a> .  |

| Text                       | Conditions which are regulated | In Norwegian acts and regulations |
|----------------------------|--------------------------------|-----------------------------------|
| ”Stoffblandingsdirektivet” |                                |                                   |

### New or existing chemical

Chemical compounds are administratively divided in two groups in EU/EEA

- All compounds which were on the market in EU before 18.09.81 is defined as existing chemicals and are part of the [EINECS-listen](#) (European Inventory of Existing Commercial Substances, a final list of chemical compounds existing in the EU countries per 18.september 1981).
- Compounds which came on the market after this date is defined as new chemicals and are on the [ELINCS-listen](#) (European List of Notified Chemical Substances, a list of new chemical compounds prior noticed in the EEC area).

New compounds are regulated in “FOR- 1996-07-01, [forskrift om forhåndsmelding av nye kjemiske stoffer](#)”. Producers or importers in Norway must check whether the compound is on the EINECS-list. If it is not, the compound is defined as a new chemical and need to be prior noticed to SFT.

### Test requirements and risk assessment

The industry must obtain accessible and relevant physical-/chemical-, toxic- and ecotoxic test data concerning the substance. Based on the test data the substance will be classified and labelled for health- and environment danger in accordance with FOR-2002-07-16 nr 1139 [forskrift om klassifisering og merking av farlige kjemikalier](#).

For prioritized compounds it shall be available a minimum of test data. If these are missing, the industry needs to do the testing. Based on the risk assessment it might also be demanded additional test from the industry. The risk assessment shall be performed according to Technical Guidance Document (TGD). This is an advice document for risk assessment of new and existing chemicals.

This risk assessment shall include a) fire and explosion danger, b) the risk for workers, consumers and humans exposed through the outer environment and c) the risk for the outer environment. When this is identified, suggestions for reduction of risks shall be made.

## 6. APPENDIX

**NORWEGIAN PRIORITY LIST (Norwegian only).** Found in St.melding 25(2002-2003, chapter 8).

**Tabell 8.1 Prioriterte kjemikalier som er omfattet av det nasjonale resultatmål 1 (Prioritetslisten)**

| Reduseres vesentlig innen 2000 og blir forsøkt stanset innen 2005:  | Reduseres vesentlig, senest innen 2010:  | Reduseres vesentlig innen 2010 også dersom stoffene oppfyller et av kriteriene under:   |
|---|--|---|
| Høyklorerte, kortkjedede parafiner<br>PCB<br>Pentaklorfenol<br>Nonylfenol og nonylfenoletoksilater*<br>Oktylfenol og oktylfenoletoksilater*<br>Enkelte tensider | Bromerte flammehemmere<br>1,2 Dikloretan (EDC)<br>Dioksiner og furaner<br>Heksaklorbenzen<br>Klorerte alkyl benzener (KAB)<br>Muskylener<br>Tetrakloreten (PER)<br>Triklorbenzen<br>Triklloreten (TRI)<br>PAH<br>Tributyltinnforbindelser<br>Trifenyltinnforbindelser<br>Bly<br>Kadmium<br>Kobber<br>Kvikksølv<br>Krom | 1. Lite nedbrytbare stoffer, hoper seg opp i levende organismer og som<br>a. har alvorlige langtidsvirkninger for helse, eller<br>b. er svært giftige i miljøet.<br>2. Svært lite nedbrytbare stoffer som svært lett hoper seg opp i levende organismer (uten krav til kjente giftigvirkninger)<br>3. Stoffer som<br>a. gjenfinnes i næringskjeden (f.eks. i morsmelk) i nivåer som kan representere en helse- eller miljørisiko, eller<br>b. gir tilsvarende grunn til bekymring slik som hormonforstyrrende stoffer og tungmetaller |

\* stanses innen 2000

Prioritetslisten består i dag av to deler med ulikt ambisjonsnivå. Utslippene av stoffene på den første delen av listen søkes stanset innen 2005, mens utslippene av stoffene på den andre delen skal reduseres vesentlig innen 2010. Kriteriene som Regjeringen foreslår er tenkt å gjelde stoffer som skal reduseres vesentlig innen 2010. Kriteriene er oppsummert i tabell 8.1, for en mer teknisk presisering av kriteriene vises det til vedlegg 2. Samfunnsøkonomiske kriterier vil også bli lagt til grunn ved utforming av konkrete virkemidler for å nå målet.

### Priority list (English translation made by SFT)

The tables below list the priority substances, indicate known remaining sources of emissions/areas of use and list the legislation that currently applies to them.

### Priority substances whose emissions are to be substantially reduced by 2000 and if possible eliminated by 2005

| Priority substances                 | Known remaining sources/areas of use   | Norwegian legislation and international agreements   |
|-------------------------------------|--|--|
| Short chained chlorinated paraffins | Have been used as plasticisers in paints and plastics, and in cutting fluids for metal working | <ul style="list-style-type: none"> <li><a href="#">Regulations relating to restrictions on the use, etc. of certain dangerous chemicals</a></li> </ul> |

**Overview of laws and regulations regarding antifouling methods in fish farming**

|   |   |   |
|---|---|---|
|   |   | <ul style="list-style-type: none"> <li>• OSPAR requires use to be phased out by 1995 and 2000, depending on the area of use.</li> </ul>   |
| Nonylphenol and its ethoxylates               | Detergents and car care products  | <ul style="list-style-type: none"> <li>• To be phased out by 2000.</li> <li>• <a href="#">Regulations relating to restrictions on the use, etc. of certain dangerous chemicals</a></li> <li>• OSPAR requires use to be phased out by 1995 and 2000, depending on the area of use.</li> </ul>                            |
| Octylphenol and its ethoxylates               | Detergents and car care products  | <ul style="list-style-type: none"> <li>• To be phased out by 2000</li> <li>• <a href="#">Regulations relating to restrictions on the use, etc. of certain dangerous chemicals</a></li> <li>• OSPAR requires use to be phased out</li> </ul>   |
| Polychlorinated biphenyls (PCBs)              | Waste problems. Small capacitors in fluorescent tubes, adhesives for insulating windows, sealing compounds, electrical bushings | <ul style="list-style-type: none"> <li>• Prohibition</li> <li>• <a href="#">Regulations relating to restrictions on the use, etc. of certain dangerous chemicals</a></li> <li>• OSPAR requires use to be phased out</li> <li>• ECE protocol (POPs)</li> <li>• Stockholm Convention</li> <li>• PIC Convention</li> </ul> |
| Pentachlorophenol (PCP)                       | May be found in small quantities in imported textiles and leather articles  | <ul style="list-style-type: none"> <li>• <a href="#">Regulations relating to restrictions on the use, etc. of certain dangerous chemicals</a></li> <li>• Restrictions on sales for private use</li> <li>• OSPAR requires use to be phased out</li> <li>• PIC Convention</li> </ul>                                      |
| Certain surfactants (DTDMAC, DSDMAC, DHTDMAC) | Constituents of car and boat care products  | <ul style="list-style-type: none"> <li>• <a href="#">Regulations relating to restrictions on the use, etc. of certain dangerous chemicals</a></li> <li>• OSPAR requires use to be phased out</li> </ul>   |

**Priority substances whose emissions are to be substantially reduced, at the latest by 2010**

| Priority substances | Known remaining sources/areas of use   | Norwegian legislation and international agreements  |
|---------------------|--|---|
| Lead                | Metallurgical and mineral industry, lead accumulators and batteries, lead shot, other ammunition, paints and varnishes, plastics, glass, sandblasting, metal products, waste incineration, fishing gear, fossil fuels, cables, sailing boats | <ul style="list-style-type: none"> <li>• Regulated in petrol (limit values)</li> <li>• Tax on leaded petrol</li> <li>• Regulated in sewage sludge (limit values)</li> </ul> |

## Overview of laws and regulations regarding antifouling methods in fish farming

|                                   |   |   |
|-----------------------------------|---|---|
|                                   |   | <ul style="list-style-type: none"> <li>● Lead shot (some areas of use prohibited), certain compounds in paints (prohibition): <a href="#">Regulations relating to restrictions on the use, etc. of certain dangerous chemicals</a></li> <li>● Lead accumulators: Regulations relating to environmentally hazardous batteries</li> <li>● Regulations concerning local air quality</li> <li>● Discharge permits</li> <li>● Reductions required by OSPAR</li> <li>● ECE protocol (heavy metals)</li> </ul>   |
| Brominated flame retardants       | Mainly found in electrical and electronic equipment, certain types of textiles, plastics and insulating materials                               | <ul style="list-style-type: none"> <li>● Certain compounds prohibited in some textiles: <a href="#">Regulations relating to restrictions on the use, etc. of certain dangerous chemicals</a></li> <li>● Regulations concerning Hazardous Waste</li> <li>● OSPAR requires use to be phased out</li> </ul>  |
| 1,2-Dichloroethane (EDC)          | Emissions from production of plastic  | <ul style="list-style-type: none"> <li>● Discharge permits</li> <li>● Reductions required by North Sea Declarations</li> </ul>  |
| Dioxins and furans                | Emissions from certain branches of industry and waste incineration  | <ul style="list-style-type: none"> <li>● Discharge permits</li> <li>● Reductions required by OSPAR</li> </ul>   |
| Hexachlorobenzene                 | Still low levels of emissions from certain branches of industry   | <ul style="list-style-type: none"> <li>● Discharge permits</li> <li>● Reductions required by North Sea Declarations</li> </ul>  |
| Cadmium                           | Emissions from certain branches of industry, rechargeable batteries, fertiliser, metal finishing treatment, combustion of oil products and coal | <ul style="list-style-type: none"> <li>● Regulated in photochemicals (limit value): <a href="#">Regulations concerning handling of Photographic chemicals for activities within photography, roentgenography and the graphics industry.</a></li> <li>● Regulated in sewage sludge (limit values)</li> <li>● Colouring agents in plastics and paints and as additive in PVC (prohibition): <a href="#">Regulations relating to restrictions on the use, etc. of certain dangerous chemicals</a></li> <li>● Rechargeable batteries (collection): Regulations relating to environmentally hazardous batteries</li> <li>● Discharge permits</li> <li>● ECE protocol (heavy metals)</li> <li>● Reductions required by OSPAR</li> </ul> |
| Chlorinated alkyl benzenes (CABs) | Low levels of emissions from nickel refineries (formed during the step after liquid-liquid extraction)  | <ul style="list-style-type: none"> <li>● Discharge permits</li> </ul>   |

## Overview of laws and regulations regarding antifouling methods in fish farming

|              |   |   |
|--------------|---|---|
| Copper       | Emissions from mines and certain branches of industry, anti-fouling preparations, impregnation of wood, pipelines, metal products   | <ul style="list-style-type: none"> <li>Regulated in photochemicals (limit value): <a href="#">Regulations concerning handling of Photographic chemicals for activities within photography, roentgenography and the graphics industry.</a></li> <li>Regulated in sewage sludge (limit values)</li> <li>Regulations on cleaning and impregnation of fish farming nets</li> <li>Discharge permits</li> <li>Reductions required by North Sea Declaration</li> </ul>   |
| Chromium     | Emissions from ferro chromium production, pigments in paints and varnishes, anti-corrosion products, sandblasting, tanning of leather   | <ul style="list-style-type: none"> <li>Discharge permits</li> <li>Restrictions on sales for private use</li> <li>Regulated in sewage sludge (limit values)</li> <li><a href="#">Regulations relating to restrictions on the use, etc. of certain dangerous chemicals</a></li> <li>Reductions required by North Sea Declarations</li> </ul>  |
| Mercury      | Emissions from branches of industry such as shredders for end-of-life vehicles, smelting plants and scrap iron processing. Other sources: amalgam discharges from dentists, fluorescent tubes. Certain batteries, measuring instruments and electrical switches | <ul style="list-style-type: none"> <li>Regulated in batteries (limit values): Regulations relating to environmentally hazardous batteries</li> <li>Anti-fouling preparations (prohibition), thermometers(prohibition), packaging (limit value): <a href="#">Regulations relating to restrictions on the use, etc. of certain dangerous chemicals</a></li> <li>Amalgam (collection) and discharges from dentists (purification): Regulations</li> <li>Regulations concerning discharges from crematorium</li> <li>Regulated in sewage sludge (limit values)</li> <li>Discharge permits</li> <li>ECE protocol (heavy metals)</li> <li>PIC Convention</li> <li>Reductions required by OSPAR</li> </ul> |
| Musk xylenes | Used as fragrances in cleaning products and toiletries  | <ul style="list-style-type: none"> <li>Regulations concerning cosmetics</li> <li>OSPAR requires use to be phased out</li> </ul>   |
| PAHs         | Emissions from certain branches of industry, waste incineration, combustion of oil products (creosote etc), fire wood   | <ul style="list-style-type: none"> <li>Standards for design of new wood-burning stoves</li> <li>Discharge permits</li> <li>Certain compounds (prohibition)</li> </ul>   |



**Overview of laws and regulations regarding antifouling methods in fish farming**

|   |  |  |
|---|--|--|
|   |  | <ul style="list-style-type: none"> <li>• Reductions required by OSPAR</li> </ul>   |
| Tetrachloroethene (PER)   | Dry-cleaning of textiles, degreasing agent, laboratory chemicals   | <ul style="list-style-type: none"> <li>• North Sea Declarations requires use to be phased out</li> <li>• Tax</li> </ul>  |
| Tributyl tin compounds  | Emissions from shipyards during sandblasting   | <ul style="list-style-type: none"> <li>• <a href="#">Regulations relating to restrictions on the use, etc. of certain dangerous chemicals</a></li> <li>• Reductions required by OSPAR</li> <li>• International Maritime Organization (IMO) has adopted convention requiring prohibition by 01.01.2003</li> </ul> |
| Triphenyl tin compounds   | Emissions from shipyards during sandblasting   | <ul style="list-style-type: none"> <li>• <a href="#">Regulations relating to restrictions on the use, etc. of certain dangerous chemicals</a></li> <li>• Reductions required by OSPAR</li> <li>• International Maritime Organization (IMO) has adopted convention requiring prohibition by 01.01.2003</li> </ul> |
| Trichlorobenzene  | Formed during incineration   | <ul style="list-style-type: none"> <li>• Discharge permits</li> <li>• Reductions required by OSPAR</li> </ul>  |
| Trichloroethene (TRI)   | Degreasing agent, solvent for laboratory analyses  | <ul style="list-style-type: none"> <li>• Tax</li> <li>• Regulations concerning reimbursement of taxes on trichloroethene(TRI)</li> <li>• Reductions required by North Sea Declarations</li> </ul>  |
| <b>In addition, the Norwegian Pollution Control Authority has identified the following substances as meeting the criteria set out in Report No. 25 (2002-2003) to the Storting:</b> |  |  |
| Arsenic   | Lead shot, industry, petroleum activities  | <ul style="list-style-type: none"> <li>• <a href="#">Regulations relating to restrictions on the use, etc. of certain dangerous chemicals</a></li> <li>• North Sea Declarations</li> </ul>   |
| DEHP  | Plasticiser in PVC plastics, rubber, paints and varnishes  | <ul style="list-style-type: none"> <li>• Reductions required by OSPAR</li> </ul>   |
| Certain PFAS/PFOS compounds   | Many products, including cleaning products, paints, varnishes, polishing agents, preservatives for textiles and footwear | <ul style="list-style-type: none"> <li>• Reductions required by OSPAR</li> </ul>   |
| Medium chain chlorinated paraffins  | Plasticisers and flame retardants in plastics, plasticisers in paints, added to cutting fluids for metals                | <ul style="list-style-type: none"> <li>• <a href="#">Regulations relating to restrictions on the use, etc. of certain dangerous chemicals</a></li> </ul>   |

Source: www.sft.no

**Institutions and persons contacted to get information:**

The Norwegian Pollution Control Authority (SFT), several departments and persons

The Ministry of the Environment

The Federation of European Aquaculture Producers (FEAP), Courtney Hough

County Governor in Trøndelag (Fylkesmannen), several persons

The Directorate of Fisheries (Fiskeridirektoratet)

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