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**Mut. & Repr. 1A & 1B as a black environmental rating criterion**29<sup>th</sup> September 2022

EOSCA note that a number of activities have taken place over the last decade or so with respect to this issue of the black environmental rating resulting from classification as Mut. & Repr. 1A & 1B.

The issue has been discussed at numerous SKIM meetings and the position presented in this document has been discussed and agreed with OFFSHORE NORGE, who will as EOSCA understands be submitting their own comments to the same effect.

With reference to correspondence between EOSCA and NEA in February 2022, as well as the discussions in 2021 and 2022 SKIM meetings, EOSCA proposes that Mut. or Repr. 1A or 1B classification as a criterion for a black environmental rating in Section 63 of the Activities regulations, is removed, as this criterion is based on human health hazard, and not environmental properties. The human health hazard category for all substances is addressed through health risk evaluations in already existing processes for health risk, according to REACH, NORSOK S-002 and internal company processes and tools, including implementation of suitable control measures for human exposure to chemicals to be reduced to acceptable levels. If the future regulations related to health hazard become more stringent, then this will of course be followed up by the industry through the existing health hazard evaluation tools. The inclusion of human health factors in environmental assessments and approvals confuses the situation.

The REP/MUT-requirement was added to the Norwegian Activities' Regulation back in 2003. This was based on the precautionary principle, even though this classification is entirely based on human exposure. It can also be added that in 2003, not many substances were classified with a RET/MUT classification, hence the effect of the inclusion of the criterion was at the time limited. This has changed with time, and the inclusion of the human health criteria in the environmental assessment needs to be re-assessed. The inclusion of this criterion was objected to at the time and in following years, in particular during the 2010/2011 discussions on sodium borates.

One objection to the criterion is that human health hazard classifications cannot be said to have a general direct link to the marine environment. The argument that 'health effects may lead to a substance being rated T (toxic) in the ECHA evaluations of the substance, and therefore being a part of the PBT criteria' is not an assumption that can be made in general, as it is a factor that needs to be documented for the specific substance in question, and it may or may not be the case. If it is the case, then there are regulations already in place covering PBT substances. There are many examples of substances that are toxic to humans but not toxic to the environment and environmental biota. One of the reasons the issue is presenting problems is because the environmental assessment is Hazard based. For the Human Health Assessment adequate PPE and controls can be used to demonstrate the reduction in risk and therefore acceptable use of a substance. However, the initial screening of chemical for the environmental assessment is based on an intrinsic hazard assessment. So, whilst it can be demonstrated that sodium borates can be used and handled by workers safely, the same human health criteria is preventing the use of the substance in the environmental assessment.

The inclusion of health hazard classification as an environmental category criterion is also in direct disharmony with the other OSPAR countries' regulations.

It is EOSCA's understanding that the intention of the environmental regulations is to protect the marine environment and marine life

In general, both environmental properties and health hazards of a substance are regulated and followed up under separate regulations and systems, and EOSCA believes there is no valid reason for health hazard classification being an environmental colour criterion, and therefore that the Mut. or Repr. 1A or 1B classification as a criterion for a black environmental rating in Section 63 of the Activities regulations, should be removed.

Our proposal would also be in-line with NEA's own proposal in the draft regulations and letter to EOSCA to alter the 'substances on the REACH candidate list' as a criterion for a black environmental rating to 'substances on the REACH candidate list due to environmental properties', i.e. removing health hazard as an environmental colour code criterion.

To illustrate the consequences of the current Activities Regulations regulation where the Mut. or Repr. 1A or 1B classification is a criterion for a black environmental rating, EOSCA would like to highlight the issue of sodium borates, in the summary below.

The current activities regulations

Black environmental category for substances due to being on the ECHA REACH candidate list (Black 2.1), but also for substances that are mutagenic Muta 1A and 1B, or reprotoxic, Repr 1A and 1B (Black 1.1).

Sodium borates – current status

If the content of the sodium borate in a product/product blend is **below** the CLP classification limit for the specific sodium borate, a black environmental category due to ECHA REACH candidate list substance (Black 2.1) and Repr. 1B (Black 1.1) would **not** be applied. This solution was introduced in 2011, following communication between EOSCA and NEA in 2010 and 2011.

The classification limit varies between 4.5 and 8.5%, depending on the sodium borate in question.

As the sodium borates are non-toxic to marine species, the current classification of a sodium borate is therefore Black (Black 2.1. and Black 1.1.) or Yellow. The content of sodium borates in product blends used on the Norwegian sector is generally below these classification limit, hence these blends currently have a yellow rating.

EU - regulatory development

17th ATP to CLP lists changes in concentration limits for boric acid and several sodium borates. The old substance-specific classification limits have been removed. The general classification limit  $\geq 0.3\%$  for Repr. 1B will then apply. This change is applicable from 17 December 2022 (latest). ([L 2021188EN.01002701.xml](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:2021188EN.01002701.xml) (europa.eu))

Future status - sodium borates

As the majority of relevant product blends used on the Norwegian sector contains  $\geq 0.3\%$  sodium borate, these blends will be classified with Repr. 1B.

As the regulations currently stand, these blends will automatically be categorised in the black environmental category this will be both due to Repr. 1B (Black 1.1) and due to the listings as EU REACH candidate list substances (Black 2.1). However, the 2022 draft Activities Regulations proposes a modification of the black category for ECHA REACH candidate list substances criterion, so that this only applies to candidate list substances where environmental properties are the basis for the listing. EOSCA supports this modification.

Even with this modification however, boric acid and sodium borates and the blends containing  $\geq 0.3\%$  of these substances, i.e. most, blends in use in the Norwegian sector, will all still be in

the black environmental category in Norway due to the Repr. 1B health hazard (Black 1.1). This will be in effect at the latest from December 2022,

The health hazard category for sodium borates, as for all substances, will, as they also are now, be addressed through health risk evaluations in already existing processes for health risk.

As highlighted by both parties in the 2010/2011 correspondence: Boric acid and boron salts are naturally present in vast amounts in rocks, soil and seawater. When discharged to sea boric acid and borate salts will dissociate to boron ions. With regards to the above reference to REACH PBT assessments, these substances would not fulfil any such criteria. Literature data show that these substances are non-toxic in the marine environment. They have been used in the Norwegian sector for decades and there is no reason to believe that they have any potential to be harmful to aquatic organisms nor to accumulate in the food chain. Please also see below the Addendum from the 2010 EOSCA Letter to NEA.

EOSCA believe that the option of keeping the Mut. or Repr. 1A or 1B classification as a criterion for a black environmental rating but for NEA to be open to granting dispensations for applications to use and discharge e.g. sodium borates, as discussed in the May 2022 SKIM meeting, is not a solution that will work. The reason being that both operators and suppliers would like to avoid a bad reputation from the optics of black rated substances being reported used and discharged, and a case-by-case situation of granting dispensations would not present a clear or level playing field in the market or industry.

EOSCA would welcome the opportunity to discuss the matter further with NEA, including the NEA's REACH and CLP team.

**Addendum from 2010:**

Generic uses of Boric acid and Borates

Borates are used in some products that are used as cross linkers, set time retarder, gelling agents, high temperature cement retarders and suspending aids.

Boric acid is used as a crosslinking agent required at < 1 kg/m<sup>3</sup> to prepare borate crosslinked fracturing fluid formulations for hydraulic fracturing stimulation of reservoirs. The boric acid is prepared as part of a crosslinker solution (onshore prior to the treatment) where it comprises < 5 weight %. Occasional treatments (less than one per year by one vendor) in the Norwegian sector of North Sea where total borate crosslinked fracturing fluid volume for one multi-fractured horizontal well is maximum to 3800m<sup>3</sup> (2260 kg L010 ).

Boric acid is a component of clay acid that is applied in sandstone reservoirs to combat fines migration, which lower hydrocarbon production. The boron is essential to the chemical reaction to provide fines stabilization. Boric acid forms less than <5.5 wt% of the clay acid solution. The clay acid formulation is prepared onshore. Treatments tend to be rare.

Mud acid treatment offshore is done by pumping directly from a vessel (boat) and /or from 4500 l tanks. Personnel would normally not be exposed to this mixture at all.

For cementing: there are additives such as a few select fluid loss control additives and retarder/retarder aids that contain these compounds that might be used on surface to intermediate casing strings.

On behalf of EOSCA,

Nik Robinson.

Executive Secretary, EOSCA