

Position paper on Iron Oxide and Mill Scales

Under European Substance Regulation (ESR) the steel companies took 3 EINECS numbers for iron oxides and 2 EINECS numbers for mill scales.

EINECS	Name and formula (asin ESIS ¹)	Proposed name for pre-registration	Read across ²
215-168-2	Diiron trioxide (Fe ₂ O ₃)	Iron ore pellets Diiron trioxide (this covers the regenerated iron oxide from the pickling line) Iron & steel scale	265-997-9 265-996-3 293-664-8 266-007-8 215-570-8 257-098-5 215-721-8 215-169-8 215-277-5
265-997-9	Iron sinter (no chemical composition given)	Iron Sinter	215-168-2 265-996-3 293-664-8 266-007-8 215-570-8 257-098-5 215-721-8 215-169-8 215-277-5
265-996-3	Iron ores agglomerates (no chemical composition given)	Iron (ore) pellets, briquetted iron ore pellets, iron ore briquettes	215-168-2 265-997-9 293-664-8 266-007-8 215-570-8 257-098-5 215-721-8 215-169-8 215-277-5

293-664-8	Scale (coating), steel-fabrication	Scale Mill scale Mill scale dry (forging)(HM)	215-168-2 265-997-9 265-996-3 266-007-8 215-570-8 257-098-5 215-721-8 215-169-8 215-277-5
266-007-8	Mill scale (ferrous metal)	Cinder Ferrosferic Iron Oxide Wet mill scale from rolling Oily Mill Scale Mill scale cinder Magnetite Scale sludge	215-168-2 265-997-9 265-996-3 293-664-8 215-570-8 257-098-5 215-721-8 215-169-8 215-277-5

Mill scales (EINECS 293-664-8 and 266-007-8³) are mainly FeO (Wuestite), but also contain Fe₂O₃ (Haematite), Fe₃O₄ (Magnetite) and other oxides and substances. If a legal entity (company) doesn't classify mill scales as a waste, it should pre-register them under one of the mentioned number(s) of mill scale(s)⁴.

There is a sameness check:

- from EINECS number 265-996-3 (iron ores agglomerates) with EINECS number 215-168-2 (diiron trioxide) in the SIEF. Although regenerated Fe₂O₃ from the pickling line is fine dust and pellets are not in the form of fine dust, SIEFs are based on chemical composition and not on physical form (this is the reason that all carbon is not exempted anymore, although only the nano-particulates could be dangerous).
- from EINECS number 293-664-8 (mill scale dry (forging)(HM)) and EINECS number 266-007-8 (mill scale (ferrous metal)) to end in one registration with all the mill scales which are not classified as waste.
- The following EINECS numbers weren't used for registration, but only as read across:
- EINECS number 215-169-8. Name: Magnetite. It's Fe(II, III) oxide. It's a mineral, so it's exempted according to Annex V.
- EINECS number 215-277-5. Name: triiron tetraoxide (Fe₃O₄). It's not manufactured in the steel industry. It will be manufactured as a waste in mill scale; however, if a legal entity (company) does want to register, it is covered by one of the two EINECS

numbers for mill scale (293-664-8 or 266-007-8).

The type of substances will always be Monoconstituent / UVCB⁵. Although sinter typically contains about 5-15% FeO, up to 15% CaO and the rest is Fe and Fe₂O₃, there is an EINECS number for sinter, so pre-registration as MCS⁶ is not necessary (for MCS you will have to mention all the constituent's EINECS numbers).

This document was updated according to current legislation in force.

"Important Notice: This position paper is intended as a supplement to the REACH Regulation and the official REACH Technical Guidance Documents published by the European Chemicals Agency (ECHA). It is provided as an advisory document and, as such, has no legal standing. Therefore, in conjunction with this position paper, users are advised to consult Regulation EC 1907/2006 (for the legally binding requirements of REACH) and the official REACH Technical Guidance Documents (for detailed information on REACH implementation). It may also be appropriate to seek independent legal advice on matters related to pre-registration and registration. While every effort has been made to ensure the accuracy of this document, neither EUROFER nor the authors of this document accept liability for its content or for the use which might be made of the information herein."

¹ European Chemical Substances Information System

² EINECS names of the read across numbers in ESIS:215-168-

2: Diiron trioxide (Fe₂O₃).

265-997-9: Iron sinter

265-996-3: Iron ores agglomerates

293-664-8: Scale (coating), steel-fabrication 266-

007-8: Mill scale (ferrous metal)

215-169-8: Magnetite

215-277-5: Triiron tetraoxide (Fe₃O₄).

215-570-8: Iron oxide (EUROFER calls it α-Fe₂O₃)

257-098-5: Iron hydroxide oxide yellow (no separate registration needed for hydroxides).215-

721-8: Iron oxide

³ Although EINECS number 305-438-9 (Slimes and sludges, steel rolling) could also be used for mill scale, this won't certainly be used to register mill scale in the end. So 305-438-9 won't be used for registration

⁴ FeO (EINECS number 215-721-8) is not in the main table, because it is recommended to register mill scale under the mill scale numbers. A read across with 215-721-8 for the two mill scale numbers was proposed in the maintable, so all mill scale producers could gather in the SIEF

⁵ Substances of unknown or variable composition, complex reaction products or biological materials

⁶ Multiconstituent substance