

REACH

Pig Iron & Hot Briquetted Iron and Direct Reduced Iron

IPIA – HBIA Istanbul October 20, 2008



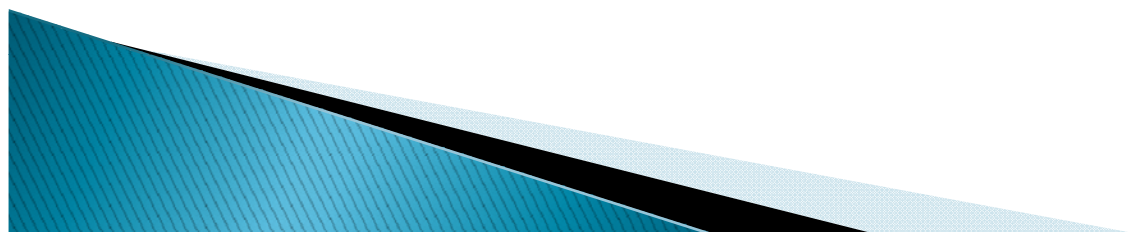
D.Filion, CONSULTANT-INNOVATION, Product Stewardship 

Pre-Registration

SUBSTANCE	EINECS NO.	EINECS NAME	EINECS DEFINITION	RECOMMENDATION
IRON	231-096-4	[Fe]		
PIG IRON	265-998-4	Iron, furnace [Fe]	The metallic substance produced in a blast furnace or direct reduction furnace which contains >90% iron	Use separate entry for pig iron - not strictly necessary under REACH, but will simplify REACH discussions.
HBI/DRI	265-998-4			HBI and DRI can be treated as the same under REACH and have similar composition to pig iron.
IRON ORES , AGGLOMERATE S [iron oxide pellets]	265-996-3	n.a.	Product of agglomerating iron ore fines, concentrates, iron sinter and other iron-bearing materials. Includes pellets, nodules and briquettes.	Use this entry for iron oxide pellets - pellets have not so far been exempted from REACH registration.

Pre-Registration

SUBSTANCE	EINECS NO.	EINECS NAME	EINECS DEFINITION	RECOMMENDATION
IRON [III] OXIDE [haematite]	215-168-2	Di-iron trioxide [Fe ₂ O ₃]		Use this entry for high purity Fe ₂ O ₃ powder [another option would be 215-570-8, but this EINECS name is clearer.
IRON [II] OXIDE	215-721-8	Iron oxide [FeO]		
IRON [II, III] OXIDE [magnetic]	215-277-5	Tri-iron tetroxide [Fe ₃ O ₄]		Use this entry for synthetic Fe ₃ O ₄



Substance Pre-Registration

Einec number recommended:

▶ EC 265-998-4

▶ Iron, Furnace

The metallic substance produced in a blast furnace or direct reduction furnace which contains over 90% iron.

▶ *Using REACH IT* (or if you prefer, IUCLID 5)

- *Suggestion to use IUCLID 5 to create LEO file to ensure reliability between REACH IT & IUCLID 5 (please refer to Sept. 29 email: Pig Iron pre-registration recommendations).*

Imp. to pre-register before November 30

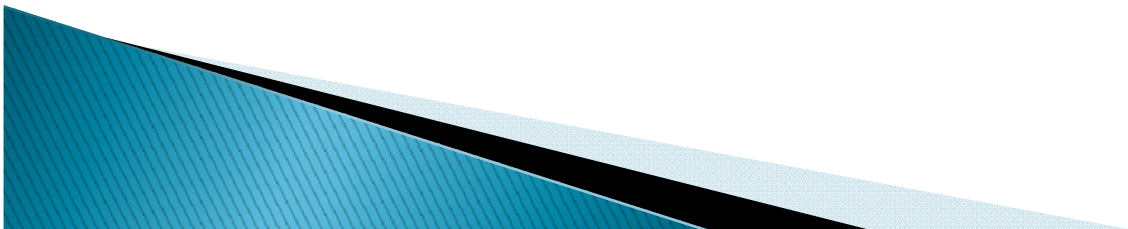
Pre-registration



- Mono constituent: **Iron, Furnace; EC 265-998-4**
 - More than 90% iron (90%-96%) with impurities

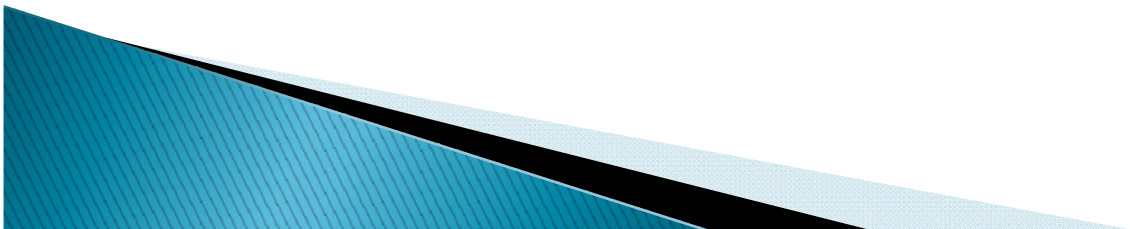
Reach defines an impurity as: "An unintended constituent present in a substance as manufactured. It may, for example, originate from the starting materials or be the result of secondary or incomplete reactions during the production process. While it is present in the final substance it was not intentionally added. In most cases impurities constitute less than 10% of the substance." = no need to pre-register.

- Therefore if impurities are part of the process (and will be explained in the IUCLID dossier for iron, furnace), due to the impurities in iron ore, ilmenite ore or recycled materials, etc. they do not need to be pre-registered or registered.



Iron, furnace Pre-registration


- ▶ However, if they are added after the process (additives), for example, in some case, like FeSi (however, it depends on the operation) then it could need to be pre-registered; but if bought in the EU which is (or will be) already pre-registered by the FeSi manufacturer than the pig iron producer does not need to pre-register it again (the same for a non EU manufacturer, if buying from EU).
- ▶ Therefore each producer must verify their processes to assess the need or not to pre-register; if in doubt, pre-register, as it cost nothing.



Iron, furnace Pre-registration

- ▶ In general more than 90% iron with the following impurities:
The list will be improved in the coming weeks; it will need to be verified and improved to add in the future the typical and range for the IUCLID dossier to represent all the producers:
 - C: up to 3%, however, in general, part of the process to produce pig iron..., no pre-registration anticipated (if coal used exempt...)
 - Si: up to 3% (can be from some process raw material source or added depending on technology used with FeSi, if bought from EU, no need to pre-register)
 - Etc. Mn, Ni: in general, less than 0.5%; max. 2% ; Al, P, : in general, less than 0.5%; Other (like Cr, Mg, V, Cu, Sn, in general, less than 0.05% but could be higher).

Important request for Iron dossier (IP): Please provide your MSDS (Material Safety Data Sheet) & TDS (technical data sheet) to my attention



Substance Registration > 1000T

REACH TECHNICAL ACTIVITIES: Physicochemical Properties and ENVIRONMENT & HUMAN HEALTH TASKS

Test requirements

KNOW THE EFFECTS, AND AT WHAT LEVEL THEY OCCUR

KNOW THE EXPOSURE
Exposure Scenarios

ASSESS THE RISK

DETERMINE RISK MANAGEMENT MEASURES FOR SAFE USE

CSR
Chemical
Safety
Report

**REACH
REGISTRATION
DOSSIER**
(with IUCLID5)

>1000 MT, CMR CAT 1 & 2
, R50/53: BY 30 NOV 2010

**PRODUCE improved
MSDS – GHS**

Human Health – Effects

Effects (endpoints)

- Acute toxicity
- Irritation
- Corrosivity
- Sensitisation
- Repeated Dose Toxicity
- Mutagenicity
- Carcinogenicity
- Toxicity for reproduction

Exposure routes

- Oral
- Dermal
- Inhalation

DNELS =

Derived-No-Effects-Level

Safe threshold for health

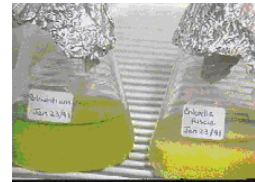
(mg Fe/person/day or mg Fe/kg BW/day)

Environmental Effects

Compartment Test (example)

▶ Aquatic

- Algal growth Inhibition Test
- Daphnia magna Immobilization Test
- Fish mortality Test
- Micro organism Test



▶ Sediment

- Ex. Invertebrate Survival and Growth Test



▶ Terrestrial

- Plant Growth Test, Micro organism Nitrification Test, chronic survival and Reproduction Test

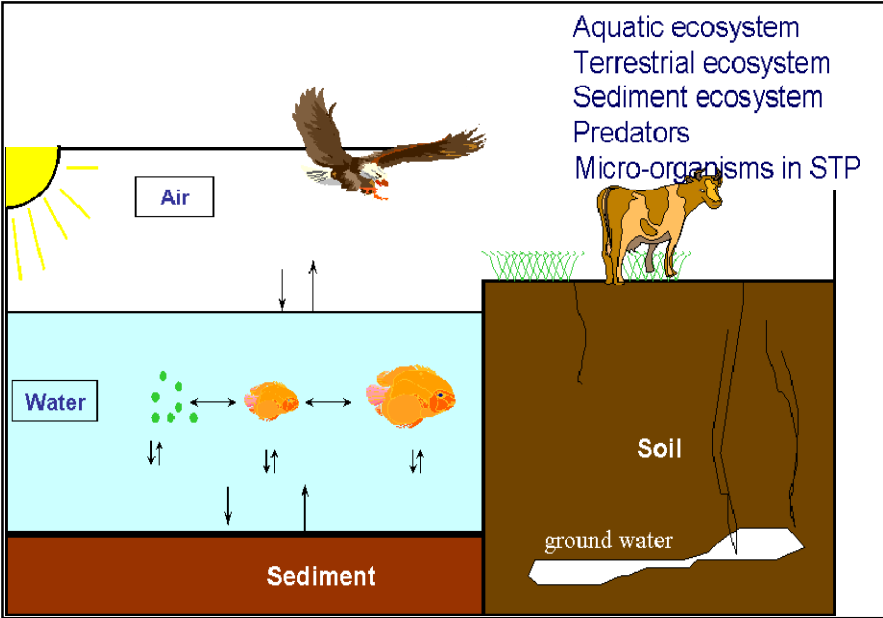


To Derive PNEC =

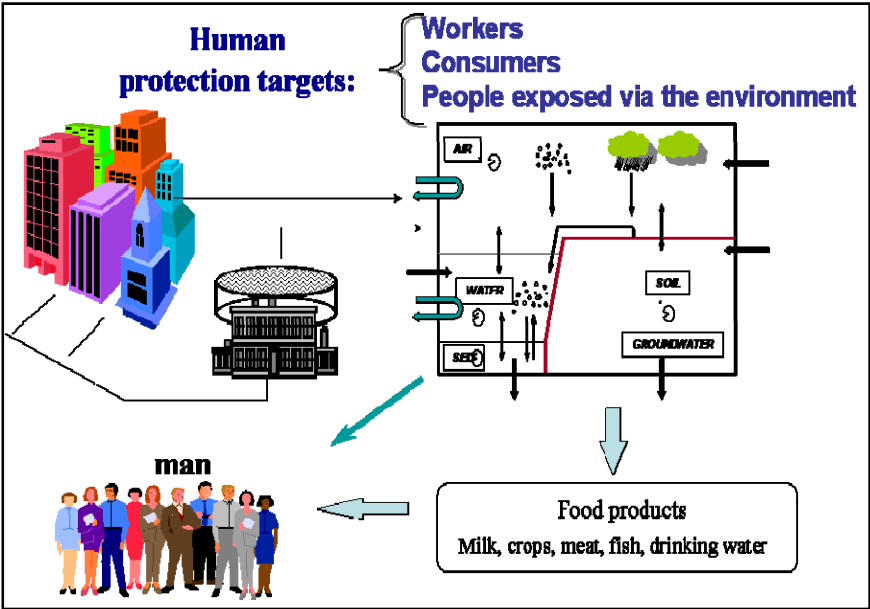
Predicted No Effect Concentration

Exposure Assessment

ENVIRONMENT



HUMAN



REACH Dossier – IUCLID 5

IUCLID 5 for the Joint Submission / SIEF

Lead Registrant for

- ▶ Iron: ArcelorMittal
- ▶ Iron, Furnace: ArcelorMittal or ?

Main process steps – draft proposal:

- Lead registrant submits required Registration Dossier to ECHA
- Ticket number is sent by ECHA to lead Registrant
- Lead Registrant distributes Ticket number to SIEF members
- SIEF members submit company registration dossier to ECHA system.

Iron Platform- Project Schedule

Iron Platform Roadmap - DRAFT								
	2008	2009				2010		
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Scientific and Regulatory								
Submit preregistration	PRE-REGISTRATION		NO PRE-REGISTRATION = NO MARKET					
Data gap analysis	DATA GAP, MSDS, TDS, Testing plan, Data sharing...							
IUCLID5 entry of existing data		[Red Bar]						
Review data, agree on strategy		[Red Bar]						
Agree on data sharing		[Red Bar]						
Agree on Classification & Labelling based on existing data		[Red Bar]						
Potential testing (see more detailed chart below)	HEALTH & ENVIRONMENT ASSESSMENT (DU questionnaire)							
Compilation of identified uses/ Exposure scenarios		[Red Bar]						
Iterative Environmental Risk Assessments			[Red Bar]					
Iterative Human Health Risk Assessment			[Red Bar]					
Draft Chemical Safety Reports				[Red Bar]				
Carry out additional testing if necessary				[Red Bar]				
Carry out additional exposure measurements if necessary				[Red Bar]				
Update IUCLID file						[Red Bar]		
Finalise Chemical Safety Report Review C/L							[Red Bar]	
Submit Registration Dossier					REG. DOSS IERS IUCLID5			[Red Bar]

→ Phase 2

❖ Thank you for your participation!

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