

## ANNEX

**E 172 IRON OXIDES AND IRON HYDROXIDES**

<b>Synonyms</b>	Iron Oxide Yellow: CI Pigment Yellow 42 and 43	
	Iron Oxide Red: CI Pigment Red 101 and 102	
	Iron Oxide Black: CI Pigment Black 11	
<b>Definition</b>	Iron oxides and iron hydroxides are produced synthetically and consist essentially of anhydrous and/or hydrated iron oxides. The range of hues includes yellows, reds, browns and blacks. Food quality iron oxides are primarily distinguished from technical grades by the comparatively low levels of contamination by other metals. This is achieved by the selection and control of the source of the iron and/or by the extent of chemical purification during the manufacturing process.	
Colour Index No	Iron Oxide Yellow:	77492
	Iron Oxide Red:	77491
	Iron Oxide Black:	77499
Einecs	Iron Oxide Yellow:	257-098-5
	Iron Oxide Red:	215-168-2
	Iron Oxide Black:	235-442-5
Chemical name	Iron Oxide Yellow: hydrated ferric oxide, hydrated iron (III) oxide	
	Iron Oxide Red: anhydrous ferric oxide, anhydrous iron (III) oxide	
	Iron Oxide Black: ferroso ferric oxide, iron (II, III) oxide	
Chemical formula	Iron Oxide Yellow:	$\text{FeO}(\text{OH}) \cdot \text{H}_2\text{O}$
	Iron Oxide Red:	$\text{Fe}_2\text{O}_3$
	Iron Oxide Black:	$\text{FeO} \cdot \text{Fe}_2\text{O}_3$
Molecular weight	88,85:	$\text{FeO}(\text{OH})$
	159,70:	$\text{Fe}_2\text{O}_3$
	231,55:	$\text{FeO} \cdot \text{Fe}_2\text{O}_3$
Assay	Yellow not less than 60 %, red and black not less than 68 % total iron, expressed as iron	
<b>Description</b>	Powder; yellow, red, brown or black in hue	
<b>Identification</b>		
Solubility	Insoluble in water and in organic solvents Soluble in concentrated mineral acids	
<b>Purity</b>		

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*Status: This is the original version (as it was originally adopted).*

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Water soluble matter	Not more than 1,0 %	By total dissolution
Arsenic	Not more than 3 mg/kg	
Cadmium	Not more than 1 mg/kg	
Chromium	Not more than 100 mg/kg	
Copper	Not more than 50 mg/kg	
Lead	Not more than 10 mg/kg	
Mercury	Not more than 1 mg/kg	
Nickel	Not more than 200 mg/kg	
Zinc	Not more than 100 mg/kg	