SAFETY DATA SHEET

BAYFERROX 610

00005517

Section 1. Identification

Product identifier : BAYFERROX 610

Uses : Colorants (pigments and dyestuffs), inorganic

Supplier/Manufacturer : LANXESS Pty Ltd
Unit 1, 35 Carter Street, Lidcombe, NSW 2141
Phone 02 8748 3911

Emergency telephone number : IXOM Emergency Response Service (ERS)
Phone 1800 033 111• 24 hours • Toll-free • Australia wide

Section 2. Hazard(s) identification

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : **No signal word.**

Hazard statements : **No known significant effects or critical hazards.**

Precautionary statements

Prevention : Not applicable.

Response : Not applicable.

Storage : Not applicable.

Disposal : Not applicable.

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : Handling and/or processing of this material may generate a dust which can cause mechanical irritation of the eyes, skin, nose and throat.

Section 3. Composition and ingredient information

Substance/mixture : Mixture

Other means of identification : Not available.

Product definition : Mixture of: Fe2O3 , Fe3O4 and FeO(OH)

CAS number/other identifiers

Ingredient name	% (w/w)	CAS number
Iron hydroxide oxide yellow	30 - 60	51274-00-1
diiron trioxide	10 - 30	1309-37-1
triiron tetraoxide	10 - 30	1317-61-9

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact : No special measures required.

Ingestion : No special measures required.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
irritation
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : No specific treatment.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : In case of fire, use water spray (fog), foam, dry chemical or CO_2.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : No specific data.

Special protective actions for fire-fighters : Not applicable.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing dust. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Move containers from spill area. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labelled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : No special measures required.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : No special measures required.

Section 8. Exposure controls and personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Iron hydroxide oxide yellow	**EH40/2005 WELs (United Kingdom (UK), 1/2012).** STEL: 10 mg/m³, (as Fe) 15 minutes. Form: Fume TWA: 5 mg/m³, (as Fe) 8 hours. Form: Fume
diiron trioxide	**Safe Work Australia (Australia, 1/2014).** TWA: 10 mg/m³ 8 hours. Form: Dust TWA: 5 mg/m³, (as Fe) 8 hours. Form: Fume
triiron tetraoxide	**EH40/2005 WELs (United Kingdom (UK), 12/2011).** STEL: 10 mg/m³, (as Fe) 15 minutes. Form: Fume TWA: 5 mg/m³, (as Fe) 8 hours. Form: Fume

Section 8. Exposure controls and personal protection

diiron trioxide	**Safe Work Australia (Australia, 1/2014).** TWA: 10 mg/m³ 8 hours. Form: Dust TWA: 5 mg/m³, (as Fe) 8 hours. Form: Fume
triiron tetraoxide	**EH40/2005 WELs (United Kingdom (UK), 12/2011).** STEL: 10 mg/m³, (as Fe) 15 minutes. Form: Fume TWA: 5 mg/m³, (as Fe) 8 hours. Form: Fume
Iron hydroxide oxide yellow	**EH40/2005 WELs (United Kingdom (UK), 1/2012).** STEL: 10 mg/m³, (as Fe) 15 minutes. Form: Fume TWA: 5 mg/m³, (as Fe) 8 hours. Form: Fume

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If operating conditions cause high dust concentrations to be produced, use dust goggles.
Recommended: safety glasses with side-shields

Skin protection

Hand protection : Recommended: Gloves

Other skin protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Recommended: Dust-protection mask

Section 9. Physical and chemical properties

Appearance

Physical state : Solid. [Powder.]

Colour : Brown.

Odour : Odourless.

Odour threshold : Not available.

pH : 4 to 8 [Conc. (% w/w): 5%]

Melting point : >1000°C (>1832°F)

Boiling point : Not available.

Flash point : Not available.

Decomposition temperature : Not available.

Evaporation rate : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Density : 4,4 kg/L (20℃)

Section 9. Physical and chemical properties

Relative density : 4 to 5

Bulk density : 300 to 1000 kg/m³

Solubility : Insoluble in the following materials: cold water

Auto-ignition temperature : Not available.

Viscosity : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : At temperatures above 80 °C the product may become unstable and oxidise. This generates additional heat which, under unfavourable conditions, may result in the combustion of flammable materials. The product should therefore not be stored near heat sources.

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure	Test
BAYFERROX 610	LD50 Oral	Rat	>5000 mg/kg *Test results on an analogous product	-	-
C.I. Pigment Yellow 42	LC50 Inhalation Dusts and mists	Rat	>195 g/m³	6 hours	-
	LC50 Inhalation Dusts and mists	Rat	>195 mg/m³	2 weeks	-
Iron (III) Oxide	LC50 Inhalation Dusts and mists	Rat	>210 mg/m³	2 weeks	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation	Reversibility
C.I. Pigment Yellow 42	Eyes - Draize	Rabbit	0	50 mg	7 days	-
	Skin - Erythema/Eschar	Rabbit	0	24 hours 500 mg	7 days	-
Iron (III) Oxide	Eyes - Draize	Rabbit	0	192 hours 0.1 ml	8 days	Fully reversible in more than 7 days
	Skin - Erythema/Eschar	Rabbit	0	4 hours 500mg	7 days	-
C.I. Pigment Black 11	Skin - Erythema/Eschar	Rabbit	0	4 hours	8 days	-
	Eyes - Cornea opacity	Rabbit	0	100 µl	8 days	-
	Eyes - Iris lesion	Rabbit	0	100 µl	8 days	-
	Eyes - Redness of the conjunctivae	Rabbit	0	100 µl	8 days	-

Section 11. Toxicological information

Conclusion/Summary

Skin : Non-irritating *Test results on an analogous product

Eyes : Non-irritating *Test results on an analogous product

Sensitisation

Product/ingredient name	Route of exposure	Species	Result
C.I. Pigment Yellow 42	skin	Guinea pig	Not sensitizing
C.I. Pigment Black 11	skin	Guinea pig	Not sensitizing

Mutagenicity

Product/ingredient name	Test	Experiment	Result
C.I. Pigment Yellow 42	Ames test	Experiment: In vitro Subject: Bacteria Metabolic activation: with/without S9 mix	Negative
	OECD 476 In vitro Mammalian Cell Gene Mutation Test	Experiment: In vitro Subject: Mammalian-Animal Cell: Somatic Metabolic activation: with/without	Negative
	OECD 473 In vitro Mammalian Chromosomal Aberration Test	Experiment: In vitro Subject: Mammalian-Animal Cell: Somatic Metabolic activation: with/without S9 mix	Negative
Iron (III) Oxide	Ames test	Experiment: In vitro Subject: Bacteria Metabolic activation: with/without S9 mix	Negative
	OECD 476 In vitro Mammalian Cell Gene Mutation Test	Experiment: In vitro Subject: Mammalian-Animal Cell: Somatic Metabolic activation: with/without S9 mix	Negative
	OECD 473 In vitro Mammalian Chromosomal Aberration Test	Experiment: In vitro Subject: Mammalian-Animal Cell: Somatic Metabolic activation: with/without S9 mix	Negative
C.I. Pigment Black 11	Ames test	Experiment: In vitro Subject: Bacteria Metabolic activation: with/without S9 mix	Negative
	OECD 476 In vitro Mammalian Cell Gene Mutation Test	Experiment: In vitro Subject: Mammalian-Animal Cell: Somatic Metabolic activation: with/without S9 mix	Negative
	OECD 473 In vitro Mammalian Chromosomal Aberration Test	Experiment: In vitro Subject: Mammalian-Animal Cell: Somatic Metabolic activation: with/without S9 mix	Negative

Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Iron hydroxide oxide yellow	Negative - Intraperitoneal -	Rat - Male, Female	600 mg/kg	914 days; 3 Injection a 200mg/kg in 8 weeks
diiron trioxide	Negative - Intraperitoneal -	Rat - Male, Female	600 mg/kg 3 x 200 mg/kg	914 days; 3 Injection / 8 weeks
triiron tetraoxide	Negative - Intraperitoneal -	Rat - Male, Female	600 mg/kg	914 days; 3 Injection (200mg/kg) / 8weeks

Section 11. Toxicological information

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Potential acute health effects

Eye contact : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

Skin contact : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
irritation
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing

Ingestion : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Product/ingredient name	Result	Species	Dose	Exposure
Iron hydroxide oxide yellow	Sub-acute NOAEC Inhalation Dusts and mists	Rat - Male	>195 mg/m³	14 days; 6 hours per day 5 days per week
diiron trioxide	Sub-acute NOAEL Inhalation Dusts and mists	Rat - Male	10,1 mg/m³	4 weeks; 6 hours per day 5 days per week
triiron tetraoxide	Sub-acute LOAEL Inhalation Dusts and mists	Rat - Male	>185,6 mg/m³	2 weeks; 6 hours per day 5 days per week

General : Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Remarks : According to our experience and information the product has no harmful effects on health if properly handled.

Section 12. Ecological information

Toxicity

Product/ingredient name	Test	Result	Species	Exposure
BAYFERROX 610	-	Acute LC50 >1000 mg/l	Fish - Leuciscus idus	96 hours

Persistence and degradability

Not available.

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Remarks : Ecotoxicological studies on the product are not available. No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	ADG	IMDG	IATA
UN number	-	-	-
UN proper shipping name	-	-	-
Transport hazard class(es)	- -	- -	- -
Packing group	-	-	-
Environmental hazards	No.	No	No
Special precautions for user/ Additional information	Not regulated.	Not regulated.	Not regulated.

Hazard notes:

Section 14. Transport information

Not dangerous cargo.
Keep separated from foodstuffs.

Transport in bulk according to Annex II of Marpol and the IBC Code : Not available.

Section 15. Regulatory information

Standard Uniform Schedule of Medicine and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

Australia inventory (AICS) : All components are listed or exempted.

Section 16. Any other relevant information

History

Date of issue/Date of revision : 2016-11-25

Date of previous issue : No previous validation

Version : 1

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

Indicates information that has changed from previously issued version.

Notice to reader

The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe the products in terms of their safety requirements. The above details do not imply any guarantee concerning composition, properties or performance.