SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : BAYFERROX 645 T

Product code : 000000000000005533

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : Colorants (pigments and dyestuffs), inorganic

1.3 Details of the supplier of the safety data sheet

Company : LANXESS Limited
Tenax Road, Trafford Park
M17 1WT, Manchester
Great Britain

Responsible Department : +34937540770
info@europigments.com

1.4 Emergency telephone number

Emergency telephone number : For 24/7 multilingual emergency please call CHEMTREC EMEA: +44 20 3885 0382 and mention CCN 1001748.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

Not a hazardous substance or mixture.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

No hazard pictogram, no signal word, no hazard statement(s), no precautionary statement(s) required.

Additional Labelling

EUH210 Safety data sheet available on request.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : FeMnO3

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Substances with a workplace exposure limit :			
iron manganese trioxide	12062-81-6 235-049-9 UK-01-1547763348-9		>= 90 - <= 100

For explanation of abbreviations see section 16.
Disclaimer: EC numbers starting with 1, 6, 7, 8, 9, or a letter in this document are ECHA List Numbers used for internal reference and do not carry legal significance as typical EC Numbers in Safety Data Sheets.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Do not leave the victim unattended.
Show this safety data sheet to the doctor in attendance.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.
If potential for exposure exists refer to Section 8 for specific personal protective equipment.

If inhaled : Remove victim to fresh air and keep at rest in a position comfortable for breathing.
If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
If unconscious, place in recovery position and get medical attention immediately.
Maintain open airway.
Loosen tight clothing such as a collar, tie, belt or waistband.
Get medical attention if symptoms occur.

In case of skin contact : Wash off with soap and water.

Get medical attention if symptoms occur.

In case of eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids.
Remove contact lenses.
Get medical attention if symptoms appear.

If swallowed : Rinse mouth with water.
Do NOT induce vomiting.
Get medical attention if symptoms occur.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : See Section 11 for more detailed information on health effects and symptoms.

Risks : See Section 11 for more detailed information on health effects and symptoms.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

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

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Do not allow run-off from fire fighting to enter drains or water courses.

5.3 Advice for firefighters

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

Further information : Standard procedure for chemical fires.
Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire.
No action shall be taken involving any personal risk or without suitable training.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : No action shall be taken involving any personal risk or without suitable training.
Keep unnecessary and unprotected personnel from entering.
Do not touch or walk through spilt material.
Avoid breathing dust.
Provide adequate ventilation.
Avoid dust formation.
In case of inadequate ventilation wear respiratory protection.
Use personal protective equipment.

6.2 Environmental precautions

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.
If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Pick up and arrange disposal without creating dust.
Sweep up and shovel.
Keep in suitable, closed containers for disposal.
Move containers from spill area.
Stop leak if safe to do so.
Dispose of wastes in an approved waste disposal facility.

6.4 Reference to other sections

For personal protection see section 8., For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : For personal protection see section 8.
Avoid contact with skin and eyes.
Provide sufficient air exchange and/or exhaust in work rooms.
In case of insufficient ventilation, wear suitable respiratory equipment.
Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use.
Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion : Provide appropriate exhaust ventilation at places where dust is formed.

Hygiene measures : General industrial hygiene practice.

When using do not eat, drink or smoke. Wash face, hands and any exposed skin thoroughly after handling. Wash contaminated clothing before reusing. Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep containers tightly closed in a dry, cool and well-ventilated place. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Electrical installations / working materials must comply with the technological safety standards.

Advice on common storage : No materials to be especially mentioned.

Further information on storage stability : Keep in a dry place.
No decomposition if stored and applied as directed.

7.3 Specific end use(s)

Specific use(s) : No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

dust of any kind

10 mg/m3
Value type (Form of exposure): TWA (Inhalable)
Basis: GB EH40

4 mg/m3
Value type (Form of exposure): TWA (Respirable fraction)
Basis: GB EH40

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
iron manganese trioxide	12062-81-6	TWA (Fumes)	5 mg/m3 (Iron)	GB EH40
		STEL (Fumes)	10 mg/m3 (Iron)	GB EH40
		TWA (Inhalable)	0.2 mg/m3 (Manganese)	GB EH40
		TWA (Respirable fraction)	0.05 mg/m3 (Manganese)	GB EH40
		TWA (inhalable fraction)	0.2 mg/m3 (Manganese)	2017/164/EU
	Further information: Indicative			

		TWA (Respirable fraction)	0.05 mg/m3 (Manganese)	2017/164/EU
	Further information: Indicative			

Derived No Effect Level (DNEL)

Substance name	End Use	Exposure routes	Potential health effects	Value
iron manganese trioxide	Workers	Inhalation	Long-term exposure, Local effects	10 mg/m3

8.2 Exposure controls

Engineering measures

Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Personal protective equipment

Eye/face protection : Safety glasses with side-shields

Hand protection
- Material : Leather gloves
- Wearing time : < 60 min

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves. After contamination with product change the gloves immediately and dispose of them according to relevant national and local regulations

Skin and body protection : Impervious clothing
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
Additional body garments should be used (e.g. sleevelets, apron, disposable suit etc.), based on the task being performed.

Respiratory protection : Dust-protection mask if there is a risk of dust formation.

Filter type : P1 filter

Environmental exposure controls

Water : The product should not be allowed to enter drains, water courses or the soil.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : powder

Physical state : solid

Colour	:	brown
Odour	:	odourless
Odour Threshold	:	No data available
pH	:	5.5 - 8.5 Concentration: 5 %
Melting point/ range	:	> 1,000 °C
Boiling point/boiling range	:	No data available
Flash point	:	Not applicable
Evaporation rate	:	No data available
Flammability	:	No data available
Burning number	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	Not applicable
Relative vapour density	:	No data available
Relative density	:	No data available
Density	:	4.5 g/cm3 (20 °C)
Bulk density	:	300 - 1,000 kg/m3
Solubility(ies)		
Water solubility	:	insoluble
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available

Explosive properties	:	No data available
Oxidizing properties	:	No data available

9.2 Other information

Particle size	:	No data available
Self-ignition	:	No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

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

10.2 Chemical stability

The product is chemically stable.

10.3 Possibility of hazardous reactions

Hazardous reactions	:	No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Conditions to avoid	:	No specific data.

10.5 Incompatible materials

Materials to avoid	:	No specific data.

10.6 Hazardous decomposition products

Hazardous decomposition products	:	No hazardous decomposition products are known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Information on likely routes of exposure	:	Inhalation Eye contact Skin contact

Acute toxicity

Not classified due to lack of data.

Components:

iron manganese trioxide:

Acute oral toxicity	:	LD50 (Rat, male): > 10,000 mg/kg Remarks: Test results on an analogous substance/product.

Skin corrosion/irritation

Not classified due to lack of data.

Components:

iron manganese trioxide:

Species	:	Rabbit
Exposure time	:	24 h
Result	:	No skin irritation
Remarks	:	Test results on an analogous substance/product.

Serious eye damage/eye irritation

Not classified due to lack of data.

Components:

iron manganese trioxide:

Species	:	Rabbit
Result	:	No eye irritation
Remarks	:	Test results on an analogous substance/product.

Respiratory or skin sensitisation

Skin sensitisation

Not classified due to lack of data.

Respiratory sensitisation

Not classified due to lack of data.

Germ cell mutagenicity

Not classified due to lack of data.

Components:

iron manganese trioxide:

Genotoxicity in vitro : Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: Yes
Remarks: Test results on an analogous substance/product.

Test system: Chinese hamster lung cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative
GLP: Yes
Remarks: Test results on an analogous substance/product.

Test system: Chinese hamster fibroblasts
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative
GLP: Yes
Remarks: Test results on an analogous substance/product.

Carcinogenicity

Not classified due to lack of data.

Reproductive toxicity

Not classified due to lack of data.

STOT - single exposure

Not classified due to lack of data.

STOT - repeated exposure

Not classified due to lack of data.

Repeated dose toxicity

Components:

iron manganese trioxide:

Species	:	Rat, male
NOAEL	:	10.1 mg/m3
Application Route	:	Inhalation
Test atmosphere	:	dust/mist
Exposure time	:	28 d
Number of exposures	:	6 hours/day
Dose	:	10,1-19,7-45,6-95,8 mg/m³
Method	:	OECD Test Guideline 412
GLP	:	Yes
Remarks	:	Subacute toxicity Test results on an analogous substance/product.

Aspiration toxicity

Not classified due to lack of data.

SECTION 12: Ecological information

12.1 Toxicity

Components:

iron manganese trioxide:

Toxicity to fish	:	LC50 (Danio rerio (zebra fish)): > 10,000 mg/l Exposure time: 96 h Test Type: static test Analytical monitoring: No GLP: No Remarks: Fresh water Test results on an analogous substance/product.
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 10,000 mg/l Exposure time: 48 h Test Type: static test Analytical monitoring: No Method: Regulation (EC) No. 440/2008, Annex, C.2 GLP: No Remarks: Fresh water

Test results on an analogous substance/product.

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (microalgae)): > 100 mg/l
End point: Growth rate
Exposure time: 72 h
Remarks: Fresh water

Toxicity to microorganisms : EC50 (activated sludge): >= 10,000 mg/l
Exposure time: 3 h
Analytical monitoring: No
Method: OECD Test Guideline 209
GLP: No
Remarks: Fresh water
Test results on an analogous substance/product.

12.2 Persistence and degradability

Components:

iron manganese trioxide:

Biodegradability : Result: The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

Product:

Endocrine disrupting potential : This substance/mixture does not contain components considered to have endocrine disrupting properties for environment according to UK REACH Article 57(f).

Additional ecological information : Ecotoxicological data are not available.
No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product	:	The generation of waste should be avoided or minimised wherever possible. Where possible recycling is preferred to disposal or incineration. Product residues and uncleaned empty containers should be packaged, sealed, labelled, and disposed of or recycled according to relevant national and local regulations. When uncleaned empty containers are passed on, the recipient must be warned of any possible hazard that may be caused by residues. Wastedisposal should be in accordance with existing federal state, provincial and or local environmental controls Do not contaminate ponds, waterways or ditches with chemical or used container. The product should not be allowed to enter drains, water courses or the soil.
Contaminated packaging	:	Empty remaining contents. Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport information

14.1 UN number

ADN	:	Not regulated as a dangerous good
ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA	:	Not regulated as a dangerous good

14.2 UN proper shipping name

ADN	:	Not regulated as a dangerous good
ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA	:	Not regulated as a dangerous good

14.3 Transport hazard class(es)

ADN	:	Not regulated as a dangerous good
ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA	:	Not regulated as a dangerous good

14.4 Packing group

ADN	:	Not regulated as a dangerous good
ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA (Cargo)	:	Not regulated as a dangerous good
IATA (Passenger)	:	Not regulated as a dangerous good

14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

Hazard and Handling Notes : Not dangerous cargo.
Keep separated from foodstuffs.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Relevant EU provisions transposed through retained EU law

UK REACH List of restrictions (Annex 17)	:	Not applicable
UK REACH Candidate list of substances of very high concern (SVHC) for Authorisation	:	Not applicable
The Persistent Organic Pollutants Regulations (retained Regulation (EU) 2019/1021 as amended for Great Britain)	:	Not applicable
International Chemical Weapons Convention (CWC) Schedules of Toxic Chemicals and Precursors	:	Not applicable
Regulation (EU) No 2024/590 on substances that deplete the ozone layer	:	Not applicable
Council Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors.	:	Neither banned nor restricted
Council Regulation (EC) No 273/2004 on drug precursors	:	Not applicable
UK REACH List of substances subject to authorisation (Annex XIV)	:	Not applicable

GB Export and import of hazardous chemicals - Prior Informed Consent (PIC) Regulation : Not applicable

Control of Major Accident Hazards Regulations 2015 (COMAH)
Not applicable

15.2 Chemical safety assessment

A Chemical Safety Assessment is not required for this substance.

SECTION 16: Other information

Full text of other abbreviations

2017/164/EU	:	Europe. Commission Directive 2017/164/EU establishing a fourth list of indicative occupational exposure limit values
GB EH40	:	UK. EH40 WEL - Workplace Exposure Limits
2017/164/EU / TWA	:	Limit Value - eight hours
GB EH40 / TWA	:	Long-term exposure limit (8-hour TWA reference period)
GB EH40 / STEL	:	Short-term exposure limit (15-minute reference period)

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Further information

The data contained in this Safety Data Sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered to be a guidance for processing and does not contain any warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. It is the responsibility of the recipient of the product to ensure that any proprietary rights and existing laws and legislation are observed.

Relevant changes from the previous version are marked on the left side of the Safety Data Sheet with a black double bar in appropriate places.