PJSC SUMYKHIMPROM

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH)

Yellow Iron Oxide pigment

Date: 06.10.2020 **Version: 2.6** **Supersedes version:2.5**

1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

1.1 Product identifier	
Substance name	iron hydroxide oxide
Trade name	yellow Iron Oxide pigment
ES#	257-098-5, 243-746-4
IUPAC	-
CAS#	51274-00-1, 20344-49-4
Molecular formula	Fe(OH)O
This substance not classified in accordance with Article 59(10) of the REACH Regulation and Annex VI of Regulation (EC) N 1272/2008 (CLP)	
REACH registration No	01-2119457554-33-0023
1.2 Relevant identified uses of the substance or mixture and uses advised against	
Identified uses	Pigment. Is applied in: - manufacture of paints and enamels, artistic paints; - tanning, paper, ceramic, rubber industries; - construction industry .
Uses advised against	No uses advised against are identified

1.3 Details of the supplier of the safety data sheet	
Manufacturer	Public Joint-Stock Company SUMYKHIMPROM Kharkivska str., Sumy, Ukraine, 40003
Only representative	ZANGAS Hoch- und Tiefbau GmbH Polina Konstantinova Schwindgasse 5/1/4, м. Vienna, 1040, Austria, E-mail P.Konstantinova@zangasgroup.com +43 1 274 16 366
Responsible person	Manufacturing Director Mr. O. V. Denschikov Address:Kharkivska str., Sumy, Ukraine, 40003 +38(0542) 683-948 (working time only)
1.4 Emergency telephone number	
+38(0542) 683-550, +38 (0542) 674-260 – 24 hours	

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance		
Classification according to Regulation (EC) No 1272/2008 [CLP/GHS]	**Self classification**	**Additional information**
-	-	-

Human Health effects	
Inhalation	Inhalation of dust may cause discomfort. Inhalation exposure to large amounts may cause a temporary drying effect or irritation of mucous membranes. Exposure to dust may lead to aggravation of pre-existing upper respiratory and lung diseases.
Eyes	Inert foreign body hazard
Skin	Prolonged contact may result in scaling/irritations due to drying of the skin and/or mechanical abrasion related to skin-to-clothing contact or skin-to-skin contact.
Swallowing	No adverse health effects anticipated by this route during proper industrial handling.

2.2 Label elements
No labeling required for the product

2.3 Other hazards

Additional information
iron hydroxide oxide is neither a PBT nor a vPvB substanc

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances			
Chemical name	**EC #**	**CAS #**	**Concentration, range %**
iron hydroxide oxide	257-098-5	51274-00-1	95 –96

4. FIRST AID MEASURES

4.1 Description of first aid measures	
General informations	Provide rest, warm conditions, comfort position, fresh air availability.
4.2 Most important symptoms and effects, both acute and delayed	
In case of inhalation	Remove to fresh air. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention for any breathing difficulty.
In case of eye contact	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
In case of skin contact	Wash skin with soap and water Use of moisturizer may be helpful.
In case of ingestion	If large amounts were swallowed, give water to drink and get medical advice.
Information to physician	Treat symptomatically and supportively.
First aid arsenal	Universal medical kit with a set of drugs (in consultation with the medical department of the enterprise.
4.3 Indication of any immediate medical attention and special treatment needed	
Immediate first aid attention is not expected	

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media	
Flammable properties	Non-flammable, non-explosive, see section 9.
Suitable extinguishing media	In case of fire, use water spray (fog), foam, dry chemical or CO_2.
Unsuitable extinguishing media	Do not scatter spilled material with high pressure water streams in case of large fire.
5.2 Special hazards arising from the substance or mixture	
Hazardous combustion products	No specific data.
Special protective equipment for fire-fighters	Wear full protective clothing and NIOSH-approved self-contained breathing apparatus (SCBA) in case of large fire.
Advice for fire-fighters	No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering. Hazard of slipping on spilt product.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures	
Personal precautions	Avoid inhalation of dust by arranging adequate ventilation, or use an appropriate dust mask. Avoid excessive contact with the skin. Use appropriate personal protective equipment.
Emergency procedures	Pick up spills and place in a suitable container for reclamation or disposal, using a method that does not generate dust (e.g. vacuum,

	sweeping). Waste container to be labelled. Ventilate area of leak or spill. Keep unauthorized personnel away.
6.2 Environmental precautions	
Avoid dust dispersion to the environment. Prevent leakages from entering drains and ditches that lead to natural waterways. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).	
6.3 Methods and material for containment and cleaning up	
Avoid dust formation. Provide adequate ventilation. It is recommended to use dust collecting equipment with bag filters for purifying air from local ventilation.	
6.4 Reference to other section	
Information about personal precautions - see Section 8. Information about waste disposal - see Section 13.	

7. HANDLING AND STORAGE

7.1 Precautions for safe handling	
Precautions for safe handling	Avoid raising and breathing dust. Observe good industrial hygiene practice for chemical handling.
Fire preventions	None, as product has no flammable properties. See section 5.
Aerosol and dust generation preventions	Use local exhaust ventilation and appropriate engineering controls to maintain dust exposures in work areas below occupational exposure limit.
Electrostatics prevention	As a matter of good practice take measures to prevent the build up of electrostatic charge, such as ensuring all equipment is electrically grounded.
Safe transporting	Adhere to the rules on the transport of goods, which operate for the appropriate type of transport. Not violate the integrity of container. During loading works execute instructions and rules for the appropriate works.
Advice on general occupational hygiene	Do not eat, drink and smoke in work areas, wash hands after use, remove contaminated clothing and protective equipment before entering eating areas.
7.2 Conditions for safe storage, including any incompatibilities	
Technical measures and storage conditions	Store in manufacturer's package in cool and dry area where it is safe from contamination and exposure to atmospheric precipitation (rain, snow) and subsoil waters.
Packaging materials	Paper, Polypropylene with polyethylene liner.
Requirements for storage rooms and vessels	Special requirements for storage structures are not established. The product is to be stored at a temperature of from -40 °C to 40 °C and normal humidity environment.
7.3 Specific end use(s)	
none	

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limits*

Chemical Name	Country	OEL
iron hydroxide oxide	United Kingdom	STEL: 10mg/m^3 (Fe) TWA: 5 mg/m^3 (Fe)
	France	VME: 5 mg/m^3 (fume)

	Germany	TLV: 6 mg/m^3 (respirable fraction)
	Norway	TWA: 3 mg/m^3
	Spain	VLA-ED: 5 mg/m^3
	Sweden	NGV: 3.5 mg/m^3(fume)
	The Netherlands	MAC-TGG:10 mg/m^3 -5 mg/m^3 (fume)
	Denmark	TWA: 3.5 mg/m^3 (Fe)
	Austria	MAK: 6 mg/m^3 (dust)
	Poland	STEL: 10 mg/m^3 (Fe) TWA: 5 mg/m^3 (Fe) (fume)
OEL – GESTIS database (International limit values for chemical agents) * For the determination and assessment of dust exposure by inhalation one should use European Standard EN 689 "Workplace atmospheres – Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy" and national guidance documents.		

Biological limit values

DNEL/DMEL values:

Substance name	DNEL/DMEL		Exposure route	Exposure frequency	Remark
	Worker Professional	Consumer			
iron hydroxide oxide	DNEL = 10 mg/m^3		Inhalation	long-term	for total dust
	DNEL = 3 mg/m^3		Inhalation	long-term	for respirable fraction

PNEC values:

Substance name	PNEC	Value	Assessment factor	Remark/Justifications
iron hydroxide oxide				Not applicable, based on available and reviewed data. In accordance with section 1 of REACH Annex XI, a study does not need to be conducted.

8.2 Exposure controls

Occupational exposure controls

Appropriate engineering controls	Ensure sufficient ventilation. Reduce inhalation hazards in minimizing the occupational exposure.
Respiratory protection	Use half mask respirators conforming to EN149 with dust filters according to EN 143 (P2 or P3)
Eye/face protection	Wear dust-proof glasses according to the EN166.
Skin protection	Use protective clothing. 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.
General hygiene considerations	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.
Environmental exposure controls	
Measures to prevent exposure	Technical measures: 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. In air and wastewater the product doesn't form any toxic compounds in the presence of other substances or factors. Do not allow material to contaminate ground water system.
Consumer exposure controls	
Measures related to consumer uses of the substance	additional measures are not required.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties	
Appearance	crystals (powder) of yellow colour
Odour	odorless
Odour threshold	Not applicable
pH	4,0-7,0 (1:10 water extract)
Melting point/range (°C)	>1000
Initial boiling point/range (°C)	is not achieved
Evaporation rate	not applicable
Flammability	not flammable
Upper/lower flammability or explosive limits	not applicable
Vapour pressure	not applicable
Vapour density	not applicable
Relative density	4,28 g/cm^3
Water solubility (20°C in g/l)	insoluble (< 1 µg/L Fe)
Partition coefficient n-Octanol/Water (log Po/w)	In accordance with Column 2 of REACH Annex VII, does not need to be conducted as the substance is inorganic.
Auto-ignition temperature (°C)	> 400°C
Viscosity	Solid
Explosive properties	Not explosive
Oxidising properties	No relevant oxidizing properties
9.2 Other information	
No other information	

10. STABILITY AND REACTIVITY

10.1 Reactivity	Not reactive under regular storage and use conditions.
10.2 Chemical stability	Stable under recommended storage and handling conditions. In case of emissions into atmosphere the substance doesn't form toxic compounds.
10.3 Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	Avoid wetting and moistening. Keep the package air-tight.
10.5 Incompatible materials	Acids. Water and atmospheric moisture.
10.6 Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition

	products should not be produced

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects.	
Toxicokinetics, metabolism and distribution	
Non-human toxikological data	Non-human toxikological data No bioaccumulation potential based on study results, iron hydroxide oxide as an inorganic substance is not metabolised.
Human toxikological data	No substantial accumulation of ferrum was observed in tissues following oral administration of iron hydroxide oxide, iron hydroxide oxide as an inorganic substance is not metabolised.
Information on toxicological effects	

Acute toxicity:

Substance name	Exposure	Value	Exposure time period	Species	Method
	oral inhalation	LD50 > 2000 mg/kg bw LC50> 195.7 mg/m³	2 weeks	rat	Bayer, 2005

Irritation	**Skin**	not irritating
	Eye	not irritating
	Respiratory tract	not irritating
Respiratory or skin sensitisation	No skin sensitisation potential was found	
Germ cell mutagenicity	Negative. The results of all available Ames tests were negative	
Carcinogenicity	Negative. Overall, there is no evidence of a carcinogenic potential of iron oxides based on animal data (DFG, 1984; IARC, 1972)	
Toxicity for reproduction	No valid animal studies for reproduction toxicity concerning are available. Due to the lack of systemic availability, effects on reproductive organs are not expected. No classification required.	
STOT-single exposure	No reversible or irreversible adverse health effects through oral exposure were observed immediately or delayed after exposure. Based on available data, the classification criteria are not met.	

Repeated dose toxicity:

Substance name	Exposure	Value	Exposure time period	Species	Method
iron hydroxide oxide	195,7 mg/m³	NOAEC: 4,7 mg /m^3 NOAEC: 10,1mg/m^3	13 weeks (subchronic) 4 weeks (subacute)	rat rat	OECD Guideline 413

STOT-repeated exposure	The substance does not show any adverse effects whatsoever in a chronic oral repeated dose toxicity study in rats; the substance is not absorbed to any relevant extent through human skin, thus no toxic effects can be expected via the dermal route of exposure. Based on available data, theclassification criteria are not met.

12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity:

Aquatic toxicity:

Aquatic toxicity	Effect dose	Exposure time	Species
Toxicity to fish	LC0 ≥ 100,000 mg/L LC50 = 1.99 mg/L	96 hours 96 hours	different fish species

	NOEC survival = 2.0 mg/L NOEC hatchability = 0.5 mg/L	72 hours 72 hours	
Toxicity to invertebrates	EC50 > 100 mg/L LC50 = 50000 mg/L	48 hours 24 hours	Daphnia
Toxicity to aquatic plants (algae)	In accordance with column 2 of REACH Annex VII, studies on toxicity to algae do not need to be conducted, as the category members are inert inorganic oxides of iron and highly insoluble in water. Soluble salts of these metals are already present in algal growth and test media as essential nutrients at concentrations exceeding the solubility of iron in the iron oxides.		
Toxicity to microorganisms	EC50 > 10000 mg/L	3 hours	activated sludge of a predominantly domestic sewage

12.2 Persistence and degradability

Abiotic Degradation

Half-time	Method	Remark
		According to column 2 from Annex VIII from the REACH regulation, a study on hydrolysis as function of the pH does not need to be conducted if the substance is highly insoluble in water.

Biodegradation	In accordance with column 2 of REACH Annex VII, a study or a calculation on the abiotic or biotic degradation of iron oxides do not need to be conducted, as the substances are inorganic

12.3 Bioaccumulative potential

Fe (OH)O is not considered as bioaccumulative

12.4 Mobility in soil

There is no evidence of mobility of this product

12.5 Results of PBT and vPvB assessment

According to Annex XIII of regulation (EC) 1907/2006 a PBT and vPvB assessment shall not be conducted for iron hydroxide oxide as inorganic substance.

12.6 Other adverse effects:

None. The product has none other adverse effects like effect on environmental fate (exposure), photochemical ozone creation potential, ozone depletion potential, endocrine disrupting potential and/or global warming potential.

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods	
Appropriate disposal / Product	Waste disposal in strict correspondence with the state and local laws and regulations.
Waste codes / waste designations according to EWC / AVV	None, waste is not classified as hazardous according to the Commission Decision 2000/532/EC
Appropriate disposal /Packaging	Dispose of container and unused contents in accordance with federal, state and local requirements.

14. TRANSPORT INFORMATION

14.1 UN number	Not applicable
14.2 UN proper shipping name	Not applicable
14.3 Transport hazard class(es)	Not applicable
14.4. Packing group	Not applicable
14.5. Environmental hazards	Not applicable
14.6. Special precautions for user	Not applicable
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable
14.8 Additional information	The product is transported by railway (RID), road (ADR), and sea (IMDG) transport. The cargo is classified as non-hazardous in compliance with the

	international rules of carriage. Obligatory mark «Keep dry».

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance
EU regulation
This product is not classified according to Regulation (EC) No 1272/2008
Other regulations
Keep the handling instructions to avoid risk for humans and environment
15.2 Chemical Safety Assessment
CHEMICAL SAFETY REPORT Iron Oxides Category Approach 2010-07-15 Currenta GmbH & Co. OHG, Bayer Schering Pharma AG

16. OTHER INFORMATION

Relevant R- , H-, EUH-phrases	none
Abbreviation	PEL - permissible exposure limit OEL – occupational exposure limit REL – recommended exposure limit DNEL - derived no-effect level PNEC - predicted no effect concentration LD50 – lethal dose LC50 – lethal concentration EC50 - half maximal effective concentration NOAEL - no observed adverse effect level NOAEC - no observed adverse effect concentration PBT or vPvB - persistent, bioaccumulative and toxic or very persistent very bioaccumulative STEL - Short Term Exposure Limit TLV-TWA - Threshold limit value (ACGIH) - time weighted average TWA: Time-weighted average MAK: Maximal arbeitsplatz konzentration Maximum allowable concentration VME: Valeur Moyenne d´Exposition - occupational exposure limit France VLA-ED: Valor Limite Ambiental Exposicion Diana- Spain NGV: Occupational Exposure Limit - Sweden
Training instructions	Read carefully the SDS before using the product
Further information	The data contained in the safety data sheet is based on the amount of information and experience available to the company at this time. A consumer product is responsible for the consequences of its use in specific purposes. Information refers to this particular substance. It may be invalid in case this substance is used together with any other materials or any other production process. The user bears responsibility for assessment of applicability and completeness of this information for his particular applications.
Key literature references and sources for data	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006, concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and

	packaging of substances and mixtures, amending and repealing GOST 18172-80 Yellow Iron Oxide pigment. Specification CHEMICAL SAFETY REPORT Iron Oxides Category Approach 2010-07-15 Currenta GmbH & Co. OHG, Bayer Schering Pharma AG
The manufacturer will be grateful for sending the information about the product utilization, to undertake the extended risks evaluation, at the address indicated on page 1.	

Annex 1

EXPOSURE SCENARIOS ACCORDING TO CHEMICAL SAFETY REPORT

Since iron hydroxide oxide yellow is neither classified as dangerous nor does it meet the criteria as a PBT/ vPvB substance, no exposure assessment is required (see REACH Art 14(4) (a) in conjunction with Annex I Section 0.6 (5) of regulation (EC) 1907/2006.)