

FERRIC OXIDE YELLOW

GHS Safety Data Sheet

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Section 2 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

HAZARD

- Not hazardous
- No hazards determined by using GHS criteria

PRECAUTIONARY STATEMENTS

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
ferric oxide	1309-37-1	>85
silica amorphous	7631-86-9	<15

Section 4 - FIRST AID MEASURES

SWALLOWED

- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- Seek medical advice.

EYE

- If this product comes in contact with the eyes:
- Wash out immediately with fresh running water.
 - Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
 - If pain persists or recurs seek medical attention.
 - Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN

- If skin or hair contact occurs:
- Flush skin and hair with running water (and soap if available).
 - Seek medical attention in event of irritation.

INHALED

- If dust is inhaled, remove from contaminated area.
- Encourage patient to blow nose to ensure clear passage of breathing.
- If irritation or discomfort persists seek medical attention.
- If fumes or combustion products are inhaled remove from contaminated area.
- Other measures are usually unnecessary.

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Section 4 - FIRST AID MEASURES

NOTES TO PHYSICIAN

Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

- There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area.

FIRE FIGHTING

Product is not combustible. No special firefighting procedures required.
Alert Fire Brigade and tell them location and nature of hazard.
Use fire fighting procedures suitable for surrounding area.

FIRE/EXPLOSION HAZARD

Non combustible.
Material is unlikely to decompose at temperatures attained in a fire.

Section 6 - ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES

MINOR SPILLS

Clean up all spills immediately.
Use dry clean up procedures and avoid generating dust.
If exposure to workplace dust is not controlled, respiratory protection is required; wear SAA approved dust respirator.
Vacuum up or sweep up.
Place in suitable containers for disposal.

MAJOR SPILLS

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Control personal contact by using protective equipment and dust respirator.
- Prevent spillage from entering drains, sewers or water courses.
- Avoid generating dust.
- Sweep, shovel up. Recover product wherever possible.
- Put residues in labelled plastic bags or other containers for disposal.
- If contamination of drains or waterways occurs, advise emergency services.

EMERGENCY RESPONSE PLANNING GUIDELINES (ERPG)

The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing

life-threatening health effects is:

ferric oxide 500 mg/m³

irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is:

ferric oxide 25 mg/m³

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Section 6 - ACCIDENTAL RELEASE MEASURES

other than mild, transient adverse effects without perceiving a clearly defined odour is:

ferric oxide 15 mg/m³

The threshold concentration below which most people will experience no appreciable risk of health effects:

ferric oxide 10 mg/m³

American Industrial Hygiene Association (AIHA)

Ingredients considered according to the following cutoffs

Very Toxic (T+) >= 0.1% Toxic (T) >= 3.0%

R50 >= 0.25% Corrosive (C) >= 5.0%

R51 >= 2.5%

else >= 10%

where percentage is percentage of ingredient found in the mixture

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



+ + + + + +

+: May be stored together

O: May be stored together with specific preventions

X: Must not be stored together

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- Avoid generating and breathing dust.
- Limit all unnecessary personal contact.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- When handling DO NOT eat, drink or smoke.
- Always wash hands with soap and water after handling.
- Avoid physical damage to containers.
- Use good occupational work practice.
- Observe manufacturer's storing and handling recommendations.

SUITABLE CONTAINER

Multi-ply paper bag with sealed plastic liner or heavy gauge plastic bag.

NOTE: Bags should be stacked, blocked, interlocked, and limited in height so that they are stable and secure against sliding or collapse. Check that all containers are clearly labelled and free from leaks. Packing as recommended by manufacturer.

STORAGE INCOMPATIBILITY

Avoid storage with aluminium, calcium hypochlorite and ethylene oxide.

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Section 7 - HANDLING AND STORAGE

STORAGE REQUIREMENTS

- Keep dry.
- Store under cover.
- Protect containers against physical damage.
- Observe manufacturer's storing and handling recommendations.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

The following materials had no OELs on our records

- ferric oxide: CAS:1309- 37- 1
- silica amorphous: CAS:7631- 86- 9 CAS:112945- 52- 5 CAS:61673- 46- 9 CAS:60572- 11- 4 CAS:56731- 06- 7 CAS:67167- 16- 2 CAS:12737- 36- 9 CAS:62655- 73- 6 CAS:70536- 23- 1 CAS:70536- 61- 7 CAS:70563- 35- 8 CAS:37241- 25- 1 CAS:37334- 65- 9 CAS:37340- 45- 7 CAS:37380- 93- 1 CAS:39336- 66- 8 CAS:39372- 58- 2 CAS:39409- 25- 1 CAS:39443- 40- 8 CAS:39456- 81- 0 CAS:50813- 13- 3 CAS:50926- 93- 7 CAS:50935- 83- 6 CAS:11139- 73- 4 CAS:87501- 59- 5 CAS:1340- 09- 6 CAS:37220- 24- 9 CAS:12774- 28- 6 CAS:52350- 43- 3 CAS:53468- 64- 7 CAS:55599- 33- 2 CAS:56645- 27- 3 CAS:12765- 74- 1 CAS:12753- 63- 8 CAS:12125- 13- 2 CAS:51542- 58- 6 CAS:11139- 72- 3 CAS:9049- 77- 8 CAS:51542- 57- 5 CAS:78207- 17- 7 CAS:126879- 14- 9 CAS:155575- 05- 6 CAS:155552- 25- 3 CAS:152787- 33- 2 CAS:152206- 35- 4 CAS:149779- 02- 2 CAS:146585- 72- 0 CAS:145808- 77- 1 CAS:173299- 41- 7 CAS:145537- 54- 8 CAS:179046- 03- 8 CAS:138860- 82- 9 CAS:137263- 03- 7 CAS:136881- 80- 6 CAS:136303- 13- 4 CAS:127831- 27- 0 CAS:127689- 16- 1 CAS:126879- 49- 0 CAS:126879- 30- 9 CAS:145686- 91- 5 CAS:231629- 15- 5 CAS:402828- 40- 4 CAS:402828- 39- 1 CAS:402828- 37- 9 CAS:368432- 40- 0 CAS:341028- 71- 5 CAS:330152- 64- 2 CAS:264907- 28- 0 CAS:250579- 78- 3 CAS:172306- 09- 1 CAS:247900- 77- 2 CAS:139074- 73- 0 CAS:217643- 58- 8 CAS:207868- 97- 1 CAS:206770- 31- 2 CAS:203526- 86- 7 CAS:191289- 29- 9 CAS:188357- 77- 9 CAS:185461- 90- 9 CAS:184654- 53- 3 CAS:250579- 70- 5 CAS:98253- 25- 9 CAS:97343- 62- 9 CAS:97709- 14- 3 CAS:98226- 40- 5 CAS:125623- 17- 8 CAS:89493- 21- 0 CAS:83652- 92- 0 CAS:122985- 48- 2 CAS:83589- 56- 4 CAS:113384- 41- 1 CAS:108727- 71- 5 CAS:107497- 59- 6

EMERGENCY EXPOSURE LIMITS

Material	Revised IDLH Value (mg/m3)	Revised IDLH Value (ppm)
ferric oxide	2, 500	

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

silica amorphous

3, 000

MATERIAL DATA

Inhalation of iron oxide dust or fume may produce a benign pneumoconiosis (siderosis). The TLV-TWA is recommended to minimise the potential for development of X-ray changes in the lung on long-term exposure. These changes are not considered to be associated with any physical impairment of lung function, although more sophisticated physiological testing, including measurement of the lung's mechanical properties and expiratory lung flow is required to reach firm and final conclusions.

INGREDIENT DATA

SILICA AMORPHOUS:

It is the goal of the ACGIH (and other Agencies) to recommend TLVs (or their equivalent) for all substances for which there is evidence of health effects at airborne concentrations encountered in the workplace.

At this time no TLV has been established, even though this material may produce adverse health effects (as evidenced in animal experiments or clinical experience). Airborne concentrations must be maintained as low as is practically possible and occupational exposure must be kept to a minimum.

NOTE: The ACGIH occupational exposure standard for Particles Not Otherwise Specified (P.N.O.S) does NOT apply.

PERSONAL PROTECTION



EYE

- Safety glasses with side shields; or as required,
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

HANDS/FEET

Wear physical protective gloves, eg. leather.

Wear safety footwear.

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

OTHER

- Overalls.
- Eyewash unit.

RESPIRATOR

Protection Factor	Half- Face Respirator	Full- Face Respirator	Powered Air Respirator
10 x ES	P1 Air- line*	- -	PAPR- P1 -
50 x ES	Air- line**	P2	PAPR- P2
100 x ES	-	P3	-
		Air- line*	-
100+ x ES	-	Air- line**	PAPR- P3

* - Negative pressure demand ** - Continuous flow.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.

For further information consult your

Occupational Health and Safety Advisor.

ENGINEERING CONTROLS

Use in a well-ventilated area.

- Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.
- Exhaust ventilation should be designed to prevent accumulation and recirculation of particulates in the workplace.
- If in spite of local exhaust an adverse concentration of the substance in air could occur, respiratory protection should be considered. Such protection might consist of:
 - (a): particle dust respirators, if necessary, combined with an absorption cartridge;
 - (b): filter respirators with absorption cartridge or canister of the right type;
 - (c): fresh-air hoods or masks
- Build-up of electrostatic charge on the dust particle, may be prevented by bonding and grounding.
- Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting.

Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to efficiently remove the contaminant.

Type of Contaminant:

direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).

Air Speed:

1- 2.5 m/s (200- 500 f/min.)

2.5- 10 m/s (500- 2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range

Upper end of the range

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

- 1: Room air currents minimal or favourable to capture
- 2: Contaminants of low toxicity or of nuisance value only
- 3: Intermittent, low production.
- 4: Large hood or large air mass in motion

- 1: Disturbing room air currents
- 2: Contaminants of high toxicity
- 3: High production, heavy use
- 4: Small hood- local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 4-10 m/s (800-2000 f/min) for extraction of crusher dusts generated 2 metres distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Odourless red to reddish brown powder; insoluble in water.
Soluble in hydrochloric and sulphuric acids, and slightly soluble in nitric acid. Occurs naturally as haematite.

PHYSICAL PROPERTIES

Solid.
Does not mix with water.
Sinks in water.

Molecular Weight: 159.7
Melting Range (°C): 1565
Solubility in water (g/L): Immiscible
pH (1% solution): Not applicable.
Volatile Component (%vol): Not applicable.
Relative Vapour Density (air=1): Not applicable.
Lower Explosive Limit (%): Not applicable
Autoignition Temp (°C): Not applicable
State: Divided solid

Boiling Range (°C): Decomposes.
Specific Gravity (water=1): 4.6- 5.4
pH (as supplied): Not applicable
Vapour Pressure (kPa): Not applicable.
Evaporation Rate: Not applicable
Flash Point (°C): Not applicable
Upper Explosive Limit (%): Not applicable
Decomposition Temp (°C): Not available.
Viscosity: Not available

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

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Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

Accidental ingestion of the material may be damaging to the health of the individual. Considered an unlikely route of entry in commercial/industrial environments.

EYE

Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).

SKIN

The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.

INHALED

The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.

Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.

CHRONIC HEALTH EFFECTS

On the basis, primarily, of animal experiments, concern has been expressed by at least one classification body that the material may produce carcinogenic or mutagenic effects; in respect of the available information, however, there presently exists inadequate data for making a satisfactory assessment.

Primary route of exposure is usually by inhalation of generated dust.

Long term exposure to high dust concentrations may cause changes in lung function (i.e. pneumoconiosis) caused by particles less than 0.5 micron penetrating and remaining in the lung. A prime symptom is breathlessness. Lung shadows show on X-ray.

Overexposure to fumes can cause benign pneumoconiosis.

TOXICITY AND IRRITATION

Not available. Refer to individual constituents.

SILICA AMORPHOUS:

TOXICITY

Oral (rat) LD50: 3160 mg/kg

Dermal (rabbit) LD50: >5000 mg/kg *

Inhalation (rat) LC50: >0.139 mg/l/14h **

[Grace]

IRRITATION

Skin (rabbit): non-irritating *

Eye (rabbit): non-irritating *

The substance is classified by IARC as Group 3:

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Section 11 - TOXICOLOGICAL INFORMATION

NOT classifiable as to its carcinogenicity to humans.
Evidence of carcinogenicity may be inadequate or limited in animal testing.
Reports indicate high/prolonged exposures to amorphous silicas induced lung fibrosis in experimental animals; in some experiments these effects were reversible. [PATTYS]

Section 12 - ECOLOGICAL INFORMATION

Refer to data for ingredients, which follows:

SILICA AMORPHOUS:

DO NOT discharge into sewer or waterways.

Aquatic toxicity (Daphnia magna) 24h EC50: >1000 mg/l

Fish toxicity (Brachydanio rerio) 96h LC50: >10,000 mg/l

[Grace]

Section 13 - DISPOSAL CONSIDERATIONS

- Recycle wherever possible or consult manufacturer for recycling options.
- Consult State Land Waste Management Authority for disposal.
- Bury residue in an authorised landfill.
- Recycle containers if possible, or dispose of in an authorised landfill.

Section 14 - TRANSPORTATION INFORMATION

HAZCHEM: None

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS:UN, IATA, IMDG

Section 15 - REGULATORY INFORMATION

REGULATIONS

ferric oxide (CAS: 1309-37-1) is found on the following regulatory lists;
International Agency for Research on Cancer (IARC) Carcinogens
International Council of Chemical Associations (ICCA) - High Production Volume List
OECD Representative List of High Production Volume (HPV) Chemicals

Section 16 - OTHER INFORMATION

INGREDIENTS WITH MULTIPLE CAS NUMBERS

Ingredient Name
silica amorphous

CAS
7631- 86- 9, 112945- 52- 5, 61673- 46- 9, 60572-

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Section 16 - OTHER INFORMATION

11- 4, 56731- 06- 7, 67167- 16- 2, 12737- 36- 9, 62655- 73- 6, 70536- 23- 1, 70536- 61- 7, 70563- 35- 8, 37241- 25- 1, 37334- 65- 9, 37340- 45- 7, 37380- 93- 1, 39336- 66- 8, 39372- 58- 2, 39409- 25- 1, 39443- 40- 8, 39456- 81- 0, 50813- 13- 3, 50926- 93- 7, 50935- 83- 6, 11139- 73- 4, 87501- 59- 5, 1340- 09- 6, 37220- 24- 9, 12774- 28- 6, 52350- 43- 3, 53468- 64- 7, 55599- 33- 2, 56645- 27- 3, 12765- 74- 1, 12753- 63- 8, 12125- 13- 2, 51542- 58- 6, 11139- 72- 3, 9049- 77- 8, 51542- 57- 5, 78207- 17- 7, 126879- 14- 9, 155575- 05- 6, 155552- 25- 3, 152787- 33- 2, 152206- 35- 4, 149779- 02- 2, 146585- 72- 0, 145808- 77- 1, 173299- 41- 7, 145537- 54- 8, 179046- 03- 8, 138860- 82- 9, 137263- 03- 7, 136881- 80- 6, 136303- 13- 4, 127831- 27- 0, 127689- 16- 1, 126879- 49- 0, 126879- 30- 9, 145686- 91- 5, 231629- 15- 5, 402828- 40- 4, 402828- 39- 1, 402828- 37- 9, 368432- 40- 0, 341028- 71- 5, 330152- 64- 2, 264907- 28- 0, 250579- 78- 3, 172306- 09- 1, 247900- 77- 2, 139074- 73- 0, 217643- 58- 8, 207868- 97- 1, 206770- 31- 2, 203526- 86- 7, 191289- 29- 9, 188357- 77- 9, 185461- 90- 9, 184654- 53- 3, 250579- 70- 5, 98253- 25- 9, 97343- 62- 9, 97709- 14- 3, 98226- 40- 5, 125623- 17- 8, 89493- 21- 0, 83652- 92- 0, 122985- 48- 2, 83589- 56- 4, 113384- 41- 1, 108727- 71- 5, 107497- 59- 6

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Issue Date: 23-Jun-2018