



Plexichrome PG Sahara Sand 2275

ICP Construction

Version No: 1.2
Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Issue Date: 05/24/2017
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S.GHS.USA.EN

SECTION 1 IDENTIFICATION

Product Identifier

| | |
|-------------------------------|---------------------------------|
| Product name | Plexichrome PG Sahara Sand 2275 |
| Synonyms | Not Available |
| Other means of identification | Not Available |

Recommended use of the chemical and restrictions on use

| | |
|--------------------------|--|
| Relevant identified uses | Color Topcoating for Athletic Surfaces |
|--------------------------|--|

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

| | |
|-------------------------|---|
| Registered company name | ICP Construction |
| Address | 150 Dascomb Road MA 01810 United States |
| Telephone | 923-623-9980 |
| Fax | Not Available |
| Website | https://www.icp-construction.com/ |
| Email | Not Available |

Emergency phone number

| | |
|-----------------------------------|----------------|
| Association / Organisation | Chemtel |
| Emergency telephone numbers | 1-800-255-3924 |
| Other emergency telephone numbers | 1-813-248-0585 |

SECTION 2 HAZARD(S) IDENTIFICATION

Classification of the substance or mixture

| | |
|----------------|---|
| Classification | Specific target organ toxicity - repeated exposure Category 2 |
|----------------|---|

Label elements

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|---------------------|--|
| Hazard pictogram(s) | |
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| | |
|-------------|----------------|
| SIGNAL WORD | WARNING |
|-------------|----------------|

Hazard statement(s)

| | |
|------|--|
| H373 | May cause damage to organs through prolonged or repeated exposure. |
|------|--|

Hazard(s) not otherwise specified

Not Applicable

Precautionary statement(s) Prevention

| | |
|------|--|
| P260 | Do not breathe dust/fume/gas/mist/vapours/spray. |
|------|--|

Precautionary statement(s) Response

| | |
|------|--|
| P314 | Get medical advice/attention if you feel unwell. |
|------|--|

Precautionary statement(s) Storage

Not Applicable

Precautionary statement(s) Disposal

| | |
|------|---|
| P501 | Dispose of contents/container in accordance with local regulations. |
|------|---|

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS**Substances**

See section below for composition of Mixtures

Mixtures

| CAS No | %[weight] | Name |
|------------|-----------|------------------------------------|
| 14464-46-1 | | <u>crystalite</u> |
| 1309-37-1 | 1-10 | <u>ferric oxide</u> |
| 51274-00-1 | 1-10 | <u>C.I. Pigment Yellow 42</u> |
| 14808-60-7 | 1-10 | <u>silica crystalline - quartz</u> |
| 107-21-1 | 1-10 | <u>ethylene glycol</u> |

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4 FIRST-AID MEASURES**Description of first aid measures**

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|---------------------|--|
| Eye Contact | <p>If this product comes in contact with eyes:</p> <ul style="list-style-type: none"> ▶ Wash out immediately with water. ▶ If irritation continues, seek medical attention. ▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
| Skin Contact | <p>If skin contact occurs:</p> <ul style="list-style-type: none"> ▶ Immediately remove all contaminated clothing, including footwear. ▶ Flush skin and hair with running water (and soap if available). ▶ Seek medical attention in event of irritation. |
| Inhalation | <ul style="list-style-type: none"> ▶ If fumes, aerosols or combustion products are inhaled remove from contaminated area. ▶ Other measures are usually unnecessary. |
| Ingestion | <ul style="list-style-type: none"> ▶ Immediately give a glass of water. ▶ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor. |

Most important symptoms and effects, both acute and delayed

See Section 11

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

For acute or short term repeated exposures to ethylene glycol:

- ▶ Early treatment of ingestion is important. Ensure emesis is satisfactory.
- ▶ Test and correct for metabolic acidosis and hypocalcaemia.
- ▶ Apply sustained diuresis when possible with hypertonic mannitol.
- ▶ Evaluate renal status and begin haemodialysis if indicated. [I.L.O]
- ▶ Rapid absorption is an indication that emesis or lavage is effective only in the first few hours. Cathartics and charcoal are generally not effective.
- ▶ Correct acidosis, fluid/electrolyte balance and respiratory depression in the usual manner. Systemic acidosis (below 7.2) can be treated with intravenous sodium bicarbonate solution.
- ▶ Ethanol therapy prolongs the half-life of ethylene glycol and reduces the formation of toxic metabolites.
- ▶ Pyridoxine and thiamine are cofactors for ethylene glycol metabolism and should be given (50 to 100 mg respectively) intramuscularly, four times per day for 2 days.
- ▶ Magnesium is also a cofactor and should be replenished. The status of 4-methylpyrazole, in the treatment regime, is still uncertain. For clearance of the material and its metabolites, haemodialysis is much superior to peritoneal dialysis.

[Ellenhorn and Barceloux: Medical Toxicology]

It has been suggested that there is a need for establishing a new biological exposure limit before a workshift that is clearly below 100 mmol ethoxy-acetic acids per mole creatinine in morning urine of people occupationally exposed to ethylene glycol ethers. This arises from the finding that an increase in urinary stones may be associated with such exposures.

Laitinen J., et al: *Occupational & Environmental Medicine* 1996; 53, 595-600**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.

Special hazards arising from the substrate or mixture

| | |
|-----------------------------|-------------|
| Fire Incompatibility | None known. |
|-----------------------------|-------------|

Special protective equipment and precautions for fire-fighters**Fire Fighting**

- ▶ Alert Fire Brigade and tell them location and nature of hazard.
- ▶ Wear breathing apparatus plus protective gloves in the event of a fire.
- ▶ Prevent, by any means available, spillage from entering drains or water courses.
- ▶ Use fire fighting procedures suitable for surrounding area.

Continued...

| | |
|------------------------------|--|
| | <ul style="list-style-type: none"> ▶ DO NOT approach containers suspected to be hot. ▶ Cool fire exposed containers with water spray from a protected location. ▶ If safe to do so, remove containers from path of fire. ▶ Equipment should be thoroughly decontaminated after use. |
| Fire/Explosion Hazard | <ul style="list-style-type: none"> ▶ Non combustible. ▶ Not considered a significant fire risk, however containers may burn. <p>May emit poisonous fumes. May emit corrosive fumes.</p> |

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

| | |
|---------------------|---|
| Minor Spills | <ul style="list-style-type: none"> ▶ Clean up all spills immediately. ▶ Avoid breathing vapours and contact with skin and eyes. ▶ Control personal contact with the substance, by using protective equipment. ▶ Contain and absorb spill with sand, earth, inert material or vermiculite. ▶ Wipe up. ▶ Place in a suitable, labelled container for waste disposal. |
| Major Spills | <ul style="list-style-type: none"> ▶ Clear area of personnel and move upwind. ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ Wear full body protective clothing with breathing apparatus. ▶ Prevent, by all means available, spillage from entering drains or water courses. ▶ Consider evacuation (or protect in place). ▶ No smoking, naked lights or ignition sources. ▶ Increase ventilation. ▶ Stop leak if safe to do so. ▶ Water spray or fog may be used to disperse / absorb vapour. ▶ Contain or absorb spill with sand, earth or vermiculite. ▶ Collect recoverable product into labelled containers for recycling. ▶ Collect solid residues and seal in labelled drums for disposal. ▶ Wash area and prevent runoff into drains. ▶ After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using. ▶ If contamination of drains or waterways occurs, advise emergency services. |

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

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

| | |
|--------------------------|--|
| Safe handling | <ul style="list-style-type: none"> ▶ Avoid all personal contact, including inhalation. ▶ Wear protective clothing when risk of exposure occurs. ▶ Use in a well-ventilated area. ▶ Avoid contact with moisture. ▶ Avoid contact with incompatible materials. ▶ When handling, DO NOT eat, drink or smoke. ▶ Keep containers securely sealed when not in use. ▶ Avoid physical damage to containers. ▶ Always wash hands with soap and water after handling. ▶ Work clothes should be laundered separately. Launder contaminated clothing before re-use. ▶ Use good occupational work practice. ▶ Observe manufacturer's storage and handling recommendations contained within this SDS. ▶ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained. ▶ DO NOT allow clothing wet with material to stay in contact with skin |
| Other information | |

Conditions for safe storage, including any incompatibilities

| | |
|--------------------------------|---|
| Suitable container | <ul style="list-style-type: none"> ▶ Polyethylene or polypropylene container. ▶ Packing as recommended by manufacturer. ▶ Check all containers are clearly labelled and free from leaks. |
| Storage incompatibility | <p>For iron oxide (ferric oxide):</p> <ul style="list-style-type: none"> ▶ Avoid storage with aluminium, calcium hypochlorite and ethylene oxide. ▶ Risk of explosion occurs following reaction with powdered aluminium, calcium silicide, ethylene oxide (polymerises), carbon monoxide, magnesium and perchlorates. ▶ Risk of ignition or formation of flammable gases or vapours occurs following reaction with carbides, for example caesium carbide, (produces heat), hydrogen sulfide, hydrogen peroxide (decomposes). ▶ An intimately powdered mixture with aluminium, usually ignited by magnesium ribbon, reacts with an intense exotherm to produce molten iron in the commercial "thermit" welding process <p>None known</p> |

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Plexichrome PG Sahara Sand 2275

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

| Source | Ingredient | Material name | TWA | STEL | Peak | Notes |
|---|-----------------------------|---|--|---------------|---------------|---|
| US OSHA Permissible Exposure Levels (PELs) - Table Z1 | crystalite | Silica, crystalline cristobalite, respirable dust | Not Available | Not Available | Not Available | See Table Z-3 |
| US OSHA Permissible Exposure Levels (PELs) - Table Z3 | crystalite | Silica: Crystalline Cristobalite | Not Available | Not Available | Not Available | Use 1/2 the value calculated from the count or mass formulae for quartz |
| US OSHA Permissible Exposure Levels (PELs) - Table Z1 | ferric oxide | Iron oxide fume | 10 mg/m3 | Not Available | Not Available | See Appendix D |
| US NIOSH Recommended Exposure Limits (RELs) | ferric oxide | Iron(III)oxide, Iron oxide red, Red iron oxide, Red oxide | 5 mg/m3 | Not Available | Not Available | TLV® Basis: Pneumoconiosis |
| US NIOSH Recommended Exposure Limits (RELs) | ferric oxide | Ferric oxide, Iron(III) oxide | 5 mg/m3 | Not Available | Not Available | Not Available |
| US ACGIH Threshold Limit Values (TLV) | ferric oxide | Iron oxide (Fe2O3) | Not Available | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Levels (PELs) - Table Z1 | silica crystalline - quartz | Silica, crystalline quartz, respirable dust | 10/(% SiO2+ 2) mg/m3 / 250/(%SiO2+5) mppcf | Not Available | Not Available | See Table Z-3 |
| US OSHA Permissible Exposure Levels (PELs) - Table Z3 | silica crystalline - quartz | Silica: Crystalline Quartz | 30/(% SiO2+ 2) mg/m3 | Not Available | Not Available | (Respirable);(TWA mppcf (The percentage of crystalline silica in the formula is the amount determined from airborne samples, except in those instances in which other methods have been shown to be applicable)); (TWA mg/m3 (e)) |
| US OSHA Permissible Exposure Levels (PELs) - Table Z3 | silica crystalline - quartz | Silica: Crystalline Quartz | 0.05 mg/m3 | Not Available | Not Available | (Total Dust) |
| US NIOSH Recommended Exposure Limits (RELs) | silica crystalline - quartz | Cristobalite, Quartz, Tridymite, Tripoli | Not Available | Not Available | Not Available | Ca See Appendix A |
| US NIOSH Recommended Exposure Limits (RELs) | ethylene glycol | 1,2-Dihydroxyethane; 1,2-Ethanedio; Glycol; Glycol alcohol; Monoethylene glycol | Not Available | Not Available | 100 mg/m3 | See Appendix D |
| US ACGIH Threshold Limit Values (TLV) | ethylene glycol | ‡ Ethylene glycol | Not Available | Not Available | Not Available | TLV® Basis: URT & eye irr |


EMERGENCY LIMITS

| Ingredient | Material name | TEEL-1 | TEEL-2 | TEEL-3 |
|-----------------------------|---|-------------|-----------|-------------|
| crystalite | Cristobalite | 0.075 mg/m3 | 33 mg/m3 | 200 mg/m3 |
| ferric oxide | Iron oxide; (Ferric oxide) | 15 mg/m3 | 360 mg/m3 | 2,200 mg/m3 |
| silica crystalline - quartz | Silica, crystalline-quartz; (Silicon dioxide) | 0.075 mg/m3 | 33 mg/m3 | 200 mg/m3 |
| ethylene glycol | Ethylene glycol | 30 ppm | 40 ppm | 60 ppm |

| Ingredient | Original IDLH | Revised IDLH |
|-----------------------------|-----------------------|---------------|
| crystalite | N.E. mg/m3 / N.E. ppm | 25 mg/m3 |
| ferric oxide | N.E. mg/m3 / N.E. ppm | 2,500 mg/m3 |
| C.I. Pigment Yellow 42 | Not Available | Not Available |
| silica crystalline - quartz | N.E. mg/m3 / N.E. ppm | 50 mg/m3 |
| ethylene glycol | Not Available | Not Available |

Exposure controls

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| Appropriate engineering controls | <p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.</p> <p>The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.</p> <p>Employers may need to use multiple types of controls to prevent employee overexposure.</p> <ul style="list-style-type: none"> ▶ Employees exposed to confirmed human carcinogens should be authorized to do so by the employer, and work in a regulated area. ▶ Work should be undertaken in an isolated system such as a "glove-box" . Employees should wash their hands and arms upon completion of the assigned task and before engaging in other activities not associated with the isolated system. ▶ Within regulated areas, the carcinogen should be stored in sealed containers, or enclosed in a closed system, including piping systems, with any sample ports or openings closed while the carcinogens are contained within. ▶ Open-vessel systems are prohibited. ▶ Each operation should be provided with continuous local exhaust ventilation so that air movement is always from ordinary work areas to the operation. ▶ Exhaust air should not be discharged to regulated areas, non-regulated areas or the external environment unless decontaminated. Clean make-up air should be introduced in sufficient volume to maintain correct operation of the local exhaust system. ▶ For maintenance and decontamination activities, authorized employees entering the area should be provided with and required to wear clean, impervious garments, including gloves, boots and continuous-air supplied hood. Prior to removing protective garments the employee should undergo decontamination |
|---|--|

| | |
|--------------------------------|---|
| | <ul style="list-style-type: none"> ▶ and be required to shower upon removal of the garments and hood. ▶ Except for outdoor systems, regulated areas should be maintained under negative pressure (with respect to non-regulated areas). ▶ Local exhaust ventilation requires make-up air be supplied in equal volumes to replaced air. ▶ Laboratory hoods must be designed and maintained so as to draw air inward at an average linear face velocity of 0.76 m/sec with a minimum of 0.64 m/sec. Design and construction of the fume hood requires that insertion of any portion of the employees body, other than hands and arms, be disallowed. |
| Personal protection |  |
| Eye and face protection | <ul style="list-style-type: none"> ▶ Safety glasses with side shields. ▶ 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 lenses 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], [AS/NZS 1336 or national equivalent] |
| Skin protection | See Hand protection below |
| Hands/feet protection | <ul style="list-style-type: none"> ▶ Wear chemical protective gloves, e.g. PVC. ▶ Wear safety footwear or safety gumboots, e.g. Rubber <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.</p> <p>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.</p> <p>Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.</p> <p>Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:</p> <ul style="list-style-type: none"> - frequency and duration of contact, - chemical resistance of glove material, - glove thickness and - dexterity <p>Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).</p> <ul style="list-style-type: none"> - When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. - When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. - Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use. - Contaminated gloves should be replaced. <p>For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended.</p> <p>It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.</p> <p>Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers' technical data should always be taken into account to ensure selection of the most appropriate glove for the task.</p> <p>Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:</p> <ul style="list-style-type: none"> - Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of. - Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential <p>Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.</p> |
| Body protection | See Other protection below |
| Other protection | <ul style="list-style-type: none"> ▶ Employees working with confirmed human carcinogens should be provided with, and be required to wear, clean, full body protective clothing (smocks, coveralls, or long-sleeved shirt and pants), shoe covers and gloves prior to entering the regulated area. [AS/NZS ISO 6529:2006 or national equivalent] ▶ Employees engaged in handling operations involving carcinogens should be provided with, and required to wear and use half-face filter-type respirators with filters for dusts, mists and fumes, or air purifying canisters or cartridges. A respirator affording higher levels of protection may be substituted. [AS/NZS 1715 or national equivalent] ▶ Emergency deluge showers and eyewash fountains, supplied with potable water, should be located near, within sight of, and on the same level with locations where direct exposure is likely. ▶ Prior to each exit from an area containing confirmed human carcinogens, employees should be required to remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to place used clothing and equipment in impervious containers at the point of exit for purposes of decontamination or disposal. The contents of such impervious containers must be identified with suitable labels. For maintenance and decontamination activities, authorized employees entering the area should be provided with and required to wear clean, impervious garments, including gloves, boots and continuous-air supplied hood. ▶ Prior to removing protective garments the employee should undergo decontamination and be required to shower upon removal of the garments and hood. ▶ Overalls. ▶ P.V.C. apron. ▶ Barrier cream. ▶ Skin cleansing cream. ▶ Eye wash unit. |
| Thermal hazards | Not Available |

Respiratory protection

Type AX Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

If inhalation risk above the TLV exists, wear approved dust respirator.

Use respirators with protection factors appropriate for the exposure level.

- ▶ Up to 5 X TLV, use valveless mask type; up to 10 X TLV, use 1/2 mask dust respirator
- ▶ Up to 50 X TLV, use full face dust respirator or demand type C air supplied respirator
- ▶ Up to 500 X TLV, use powered air-purifying dust respirator or a Type C pressure demand supplied-air respirator
- ▶ Over 500 X TLV wear full-face self-contained breathing apparatus with positive pressure mode or a combination respirator with a Type C positive pressure supplied-air

▶ full-face respirator and an auxiliary self-contained breathing apparatus operated in pressure demand or other positive pressure mode

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

| Appearance | Text | | |
|--|---------------|---|---------------|
| Physical state | Liquid | Relative density (Water = 1) | Not Available |
| Odour | Not Available | Partition coefficient n-octanol / water | Not Available |
| Odour threshold | Not Available | Auto-ignition temperature (°C) | Not Available |
| pH (as supplied) | 8.5 | Decomposition temperature | Not Available |
| Melting point / freezing point (°C) | Not Available | Viscosity (cSt) | Not Available |
| Initial boiling point and boiling range (°C) | Not Available | Molecular weight (g/mol) | Not Available |
| Flash point (°C) | Not Available | Taste | Not Available |
| Evaporation rate | Not Available | Explosive properties | Not Available |
| Flammability | Not Available | Oxidising properties | Not Available |
| Upper Explosive Limit (%) | Not Available | Surface Tension (dyn/cm or mN/m) | Not Available |
| Lower Explosive Limit (%) | Not Available | Volatile Component (%vol) | Not Available |
| Vapour pressure (kPa) | Not Available | Gas group | Not Available |
| Solubility in water (g/L) | Immiscible | pH as a solution (1%) | Not Available |
| Vapour density (Air = 1) | Not Available | VOC g/L | Not Available |

SECTION 10 STABILITY AND REACTIVITY

| | |
|------------------------------------|--|
| Reactivity | See section 7 |
| Chemical stability | <ul style="list-style-type: none"> ▶ Unstable in the presence of incompatible materials. ▶ Product is considered stable. ▶ Hazardous polymerisation will not occur. |
| Possibility of hazardous reactions | See section 7 |
| Conditions to avoid | See section 7 |
| Incompatible materials | See section 7 |
| Hazardous decomposition products | See section 5 |

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

| | |
|--------------|--|
| 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. |
| Ingestion | The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. |
| Skin Contact | <p>Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.</p> <p>There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons.</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p> |
| Eye | Although the liquid 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). |
| Chronic | <p>Substance accumulation, in the human body, is likely and may cause some concern following repeated or long-term occupational exposure.</p> <p>There is sufficient evidence to suggest that this material directly causes cancer in humans.</p> <p>Crystalline silicas activate the inflammatory response of white blood cells after they injure the lung epithelium. Chronic exposure to crystalline silicas reduces lung capacity and predisposes to chest infections.</p> |

| | | |
|---------------------------------|---------------|---------------|
| Plexichrome PG Sahara Sand 2275 | TOXICITY | IRRITATION |
| | Not Available | Not Available |
| cristobalite | TOXICITY | IRRITATION |
| | Not Available | Not Available |

| | | |
|-----------------------------|--|----------------------------------|
| ferric oxide | TOXICITY | IRRITATION |
| | Oral (rat) LD50: >5000 mg/kg ^[1] | Not Available |
| C.I. Pigment Yellow 42 | TOXICITY | IRRITATION |
| | Oral (rat) LD50: >5000 mg/kg ^[2] | Not Available |
| silica crystalline - quartz | TOXICITY | IRRITATION |
| | Not Available | Not Available |
| ethylene glycol | TOXICITY | IRRITATION |
| | Dermal (rabbit) LD50: 9530 mg/kgD ^[2] | Eye (rabbit): 100 mg/1h - mild |
| | Oral (rat) LD50: 4700 mg/kgd ^[2] | Eye (rabbit): 12 mg/m3/3D |
| | | Eye (rabbit): 1440mg/6h-moderate |
| | | Eye (rabbit): 500 mg/24h - mild |
| | | Skin (rabbit): 555 mg(open)-mild |

Legend: 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

| | |
|--|---|
| CRISTOBALITE | Inhalation (human) TClO: 16 mppcf*/8H/17.9y-1 * Millions of particles per cubic foot |
| C.I. PIGMENT YELLOW 42 | No significant acute toxicological data identified in literature search. The substance is classified by IARC as Group 3: NOT classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing. |
| ETHYLENE GLYCOL | For ethylene glycol: Ethylene glycol is quickly and extensively absorbed throughout the gastrointestinal tract. Limited information suggests that it is also absorbed through the airways; absorption through skin is apparently slow. Following absorption, it is distributed throughout the body. [Estimated Lethal Dose (human) 100 ml; RTECS quoted by Orica] Substance is reproductive effector in rats (birth defects). Mutagenic to rat cells. |
| CRISTOBALITE & SILICA CRYSTALLINE - QUARTZ | WARNING: For inhalation exposure <u>ONLY</u> : This substance has been classified by the IARC as Group 1: CARCINOGENIC TO HUMANS |
| CRISTOBALITE & SILICA CRYSTALLINE - QUARTZ | The International Agency for Research on Cancer (IARC) has classified occupational exposures to respirable (<5 um) crystalline silica as being carcinogenic to humans . This classification is based on what IARC considered sufficient evidence from epidemiological studies of humans for the carcinogenicity of inhaled silica in the forms of quartz and cristobalite. Crystalline silica is also known to cause silicosis, a non-cancerous lung disease. |
| FERRIC OXIDE & C.I. PIGMENT YELLOW 42 | Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. |

| | | | |
|-----------------------------------|---|--------------------------|---|
| Acute Toxicity | ☒ | Carcinogenicity | ☒ |
| Skin Irritation/Corrosion | ☒ | Reproductivity | ☒ |
| Serious Eye Damage/Irritation | ☒ | STOT - Single Exposure | ☒ |
| Respiratory or Skin sensitisation | ☒ | STOT - Repeated Exposure | ✓ |
| Mutagenicity | ☒ | Aspiration Hazard | ☒ |

Legend: ✗ – Data available but does not fill the criteria for classification
 ✓ – Data available to make classification
 ☒ – Data Not Available to make classification

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

| | | | | | |
|---------------------------------|----------------|--------------------|-------------------------------|----------------|----------------|
| Plexichrome PG Sahara Sand 2275 | ENDPOINT | TEST DURATION (HR) | SPECIES | VALUE | SOURCE |
| | Not Applicable | Not Applicable | Not Applicable | Not Applicable | Not Applicable |
| cristobalite | ENDPOINT | TEST DURATION (HR) | SPECIES | VALUE | SOURCE |
| | Not Applicable | Not Applicable | Not Applicable | Not Applicable | Not Applicable |
| ferric oxide | ENDPOINT | TEST DURATION (HR) | SPECIES | VALUE | SOURCE |
| | LC50 | 96 | Fish | 0.05mg/L | 2 |
| | EC50 | 72 | Algae or other aquatic plants | 18mg/L | 2 |

Continued...

| | | | | | |
|--|------|-----|-----------|----------|---|
| | EC50 | 504 | Crustacea | 4.49mg/L | 2 |
| | NOEC | 504 | Fish | 0.52mg/L | 2 |

| C.I. Pigment Yellow 42 | ENDPOINT | TEST DURATION (HR) | SPECIES | VALUE | SOURCE |
|------------------------|----------|--------------------|-------------------------------|----------|--------|
| | LC50 | 96 | Fish | 0.05mg/L | 2 |
| | EC50 | 72 | Algae or other aquatic plants | 18mg/L | 2 |
| | EC50 | 504 | Crustacea | 4.49mg/L | 2 |
| | NOEC | 504 | Fish | 0.52mg/L | 2 |

| silica crystalline - quartz | ENDPOINT | TEST DURATION (HR) | SPECIES | VALUE | SOURCE |
|-----------------------------|----------------|--------------------|----------------|----------------|----------------|
| | Not Applicable | Not Applicable | Not Applicable | Not Applicable | Not Applicable |

| ethylene glycol | ENDPOINT | TEST DURATION (HR) | SPECIES | VALUE | SOURCE |
|-----------------|----------|--------------------|-------------------------------|----------------|--------|
| | LC50 | 96 | Fish | 2284.940mg/L | 3 |
| | EC50 | 48 | Crustacea | 5046.29mg/L | 5 |
| | EC50 | 96 | Algae or other aquatic plants | 6500-13000mg/L | 1 |
| | EC50 | Not Applicable | Crustacea | =10mg/L | 1 |
| | NOEC | 552 | Crustacea | >=1000mg/L | 2 |

Legend: Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

DO NOT discharge into sewer or waterways.

Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|-----------------|---------------------------|-----------------------------|
| ethylene glycol | LOW (Half-life = 24 days) | LOW (Half-life = 3.46 days) |

Bioaccumulative potential

| Ingredient | Bioaccumulation |
|-----------------|-----------------|
| ethylene glycol | LOW (BCF = 200) |

Mobility in soil

| Ingredient | Mobility |
|-----------------|----------------|
| ethylene glycol | HIGH (KOC = 1) |

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

| | |
|-------------------------------------|--|
| Product / Packaging disposal | <ul style="list-style-type: none"> ▶ Containers may still present a chemical hazard/ danger when empty. ▶ Return to supplier for reuse/ recycling if possible. <p>Otherwise:</p> <ul style="list-style-type: none"> ▶ If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill. ▶ Where possible retain label warnings and SDS and observe all notices pertaining to the product. <p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none"> ▶ Reduction ▶ Reuse ▶ Recycling ▶ Disposal (if all else fails) <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.</p> <ul style="list-style-type: none"> ▶ DO NOT allow wash water from cleaning or process equipment to enter drains. ▶ It may be necessary to collect all wash water for treatment before disposal. ▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▶ Where in doubt contact the responsible authority. ▶ Recycle wherever possible. ▶ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified. ▶ Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or incineration in a licensed apparatus (after admixture with suitable combustible material). ▶ Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed. |
|-------------------------------------|--|

SECTION 14 TRANSPORT INFORMATION**Labels Required**

| Marine Pollutant | NO |
|------------------|----|
| | |

Land transport (DOT): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

SECTION 15 REGULATORY INFORMATION**Safety, health and environmental regulations / legislation specific for the substance or mixture****CRISTOBALITE(14464-46-1) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

| | |
|---|---|
| US - Alaska Limits for Air Contaminants | US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants |
| US - California Permissible Exposure Limits for Chemical Contaminants | US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants |
| US - Hawaii Air Contaminant Limits | US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants |
| US - Idaho - Limits for Air Contaminants | US - Washington Permissible exposure limits of air contaminants |
| US - Idaho - Toxic and Hazardous Substances - Mineral Dust | US - Washington Toxic air pollutants and their ASIL, SQER and de minimis emission values |
| US - Massachusetts - Right To Know Listed Chemicals | US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants |
| US - Michigan Exposure Limits for Air Contaminants | US - Wyoming Toxic and Hazardous Substances Table Z-3 Mineral Dusts |
| US - Minnesota Permissible Exposure Limits (PELs) | US ACGIH Threshold Limit Values (TLV) - Carcinogens |
| US - New Jersey Right to Know - Special Health Hazard Substance List (SHHSL): Carcinogens | US OSHA Permissible Exposure Levels (PELs) - Table Z1 |
| US - Oregon Permissible Exposure Limits (Z-1) | US OSHA Permissible Exposure Levels (PELs) - Table Z3 |
| US - Oregon Permissible Exposure Limits (Z-3) | US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory |
| US - Pennsylvania - Hazardous Substance List | |

FERRIC OXIDE(1309-37-1) IS FOUND ON THE FOLLOWING REGULATORY LISTS

| | |
|---|---|
| International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs | US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants |
| US - Alaska Limits for Air Contaminants | US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants |
| US - California Permissible Exposure Limits for Chemical Contaminants | US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants |
| US - Hawaii Air Contaminant Limits | US - Washington Permissible exposure limits of air contaminants |
| US - Idaho - Limits for Air Contaminants | US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants |
| US - Massachusetts - Right To Know Listed Chemicals | US ACGIH Threshold Limit Values (TLV) |
| US - Michigan Exposure Limits for Air Contaminants | US ACGIH Threshold Limit Values (TLV) - Carcinogens |
| US - Minnesota Permissible Exposure Limits (PELs) | US NIOSH Recommended Exposure Limits (RELs) |
| US - Oregon Permissible Exposure Limits (Z-1) | US OSHA Permissible Exposure Levels (PELs) - Table Z1 |
| US - Pennsylvania - Hazardous Substance List | US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory |
| US - Rhode Island Hazardous Substance List | |

C.I. PIGMENT YELLOW 42(51274-00-1) IS FOUND ON THE FOLLOWING REGULATORY LISTS

| | |
|--|---|
| US - Alaska Limits for Air Contaminants | US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory |
| US - Pennsylvania - Hazardous Substance List | |

SILICA CRYSTALLINE - QUARTZ(14808-60-7) IS FOUND ON THE FOLLOWING REGULATORY LISTS

| | |
|---|--|
| International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs | US - Rhode Island Hazardous Substance List |
| US - Alaska Limits for Air Contaminants | US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants |
| US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs) | US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants |
| US - California Permissible Exposure Limits for Chemical Contaminants | US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants |
| US - California Proposition 65 - Carcinogens | US - Washington Permissible exposure limits of air contaminants |
| US - Hawaii Air Contaminant Limits | US - Washington Toxic air pollutants and their ASIL, SQER and de minimis emission values |
| US - Idaho - Limits for Air Contaminants | US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants |
| US - Idaho - Toxic and Hazardous Substances - Mineral Dust | US - Wyoming Toxic and Hazardous Substances Table Z-3 Mineral Dusts |
| US - Massachusetts - Right To Know Listed Chemicals | US ACGIH Threshold Limit Values (TLV) - Carcinogens |
| US - Michigan Exposure Limits for Air Contaminants | US National Toxicology Program (NTP) 14th Report Part A Known to be Human Carcinogens |
| US - Minnesota Permissible Exposure Limits (PELs) | US NIOSH Recommended Exposure Limits (RELs) |
| US - New Jersey Right to Know - Special Health Hazard Substance List (SHHSL): Carcinogens | US OSHA Permissible Exposure Levels (PELs) - Table Z1 |
| US - Oregon Permissible Exposure Limits (Z-1) | US OSHA Permissible Exposure Levels (PELs) - Table Z3 |
| US - Oregon Permissible Exposure Limits (Z-3) | US Priority List for the Development of Proposition 65 Safe Harbor Levels - No Significant Risk Levels (NSRLs) for Carcinogens and Maximum Allowable Dose Levels (MADLs) for Chemicals Causing Reproductive Toxicity |
| US - Pennsylvania - Hazardous Substance List | US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory |

ETHYLENE GLYCOL(107-21-1) IS FOUND ON THE FOLLOWING REGULATORY LISTS

| | |
|---|---|
| US - Alaska Limits for Air Contaminants | US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants |
| US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs) | US - Washington Permissible exposure limits of air contaminants |
| US - California Permissible Exposure Limits for Chemical Contaminants | US - Washington Toxic air pollutants and their ASIL, SQER and de minimis emission values |
| US - California Proposition 65 - Reproductive Toxicity | US ACGIH Threshold Limit Values (TLV) |
| US - Hawaii Air Contaminant Limits | US ACGIH Threshold Limit Values (TLV) - Carcinogens |
| US - Massachusetts - Right To Know Listed Chemicals | US ACGIH Threshold Limit Values (TLV) - Notice of Intended Changes |
| US - Michigan Exposure Limits for Air Contaminants | US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs) |
| US - Minnesota Permissible Exposure Limits (PELs) | US Clean Air Act - Hazardous Air Pollutants |
| US - Oregon Permissible Exposure Limits (Z-1) | US EPCRA Section 313 Chemical List |
| US - Pennsylvania - Hazardous Substance List | US NIOSH Recommended Exposure Limits (RELs) |
| US - Rhode Island Hazardous Substance List | US Spacecraft Maximum Allowable Concentrations (SMACs) for Airborne Contaminants |
| US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants | US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory |
| US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants | |

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SECTION 311/312 HAZARD CATEGORIES

| | |
|---------------------------------|-----|
| Immediate (acute) health hazard | No |
| Delayed (chronic) health hazard | Yes |
| Fire hazard | No |
| Pressure hazard | No |
| Reactivity hazard | No |

US. EPA CERCLA HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES (40 CFR 302.4)

| Name | Reportable Quantity in Pounds (lb) | Reportable Quantity in kg |
|-----------------|------------------------------------|---------------------------|
| Ethylene glycol | 5000 | 2270 |

State Regulations

US. CALIFORNIA PROPOSITION 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm

US - CALIFORNIA PREPOSITION 65 - CARCINOGENS & REPRODUCTIVE TOXICITY (CRT): LISTED SUBSTANCE

Silica, crystalline (airborne particles of respirable size), Ethylene glycol (ingested) Listed

| National Inventory | Status |
|-------------------------------|--|
| Australia - AICS | Y |
| Canada - DSL | Y |
| Canada - NDSL | N (silica crystalline - quartz; cristobalite; ethylene glycol; ferric oxide; C.I. Pigment Yellow 42) |
| China - IECSC | Y |
| Europe - EINEC / ELINCS / NLP | Y |
| Japan - ENCS | N (silica crystalline - quartz; cristobalite; ethylene glycol; ferric oxide; C.I. Pigment Yellow 42) |
| Korea - KECI | Y |
| New Zealand - NZIoC | Y |
| Philippines - PICCS | Y |
| USA - TSCA | Y |
| Legend: | Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets) |

SECTION 16 OTHER INFORMATION

CONTACT POINT

PLEASE NOTE THAT TITANIUM DIOXIDE IS NOT PRESENT IN CLEAR OR NEUTRAL BASES

Other information

Ingredients with multiple cas numbers

| Name | CAS No |
|-----------------------------|---|
| C.I. Pigment Yellow 42 | 51274-00-1, 12259-21-1, 105478-30-6, 53028-10-7, 1342-51-4, 12000-32-7, 50641-37-7, 51109-85-4, 99241-66-4, 131462-81-2, 147625-38-5, 12001-03-5, 185464-57-7, 182761-12-2, 94809-98-0, 934248-40-5 |
| silica crystalline - quartz | 14808-60-7, 122304-48-7, 122304-49-8, 12425-26-2, 1317-79-9, 70594-95-5, 87347-84-0, 308075-07-2 |

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average
PC—STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit,
IDLH: Immediately Dangerous to Life or Health Concentrations
OSF: Odour Safety Factor
NOAEL: No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index

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