

5X Gold

Revision nr. 1

Dated 03/08/2017

Polishing Powders

Printed on 03/08/2017

Page n. 1/16

Safety data sheet

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

1.1. Product identifier

Code: **MAJR04**
 Product name and synonym: **5X Gold Polishing Powder**

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

Intended use: **Polishing mixture for marble and stone, professional use**

1.3. Details of the supplier of the safety data sheet

Name: **M3 Technologies Inc.**
 Full address: **57 Lamberts Lane**
 District and Country: **Cohasset, MA 02025**

tel. **781 383 3134**fax **781 383 3135**

e-mail address of the competent person
 responsible for the Safety Data Sheet

1.4. Emergency telephone number

For urgent inquiries refer to: **EMERGENCY PHONE: (CHEMTREC) 800-424-9300**

SECTION 2. Hazards identification

2.1. Classification of the substance or mixture

The product is classified as hazardous pursuant to the provisions set forth in EC Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of EC Regulation 1907/2006 and subsequent amendments. Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

Hazard classification and indication:

Acute toxicity, category 4	H302	Harmful if swallowed.
Acute toxicity, category 4	H312	Harmful in contact with skin.
Serious eye damage, category 1	H318	Causes serious eye damage.

2.2. Label elements

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

Hazard pictograms:

Signal words: **Danger**

Hazard statements:

H302+H312 Harmful if swallowed or in contact with skin.
H318 Causes serious eye damage.

5X Gold

Revision nr. 1

Dated 03/08/2017

Polishing Powders

Printed on 03/08/2017

Page n. 2/16

Precautionary statements:

P264	Wash face and hands thoroughly after handling.
P301+P312	IF SWALLOWED: Call a POISON CENTER / doctor / physician / if you feel unwell.
P302+P352	IF ON SKIN: Wash with plenty of water
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER / doctor / physician
P280	Wear protective gloves / clothing and eye / face protection.

Contains: OXALIC ACID
POTASSIUM HYDROGEN OXALATE

2.3. Other hazards

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

SECTION 3. Composition/information on ingredients**3.1. Substances**

Information not relevant

3.2. Mixtures

Contains:

Identification	Conc. %	Classification 1272/2008 (CLP)
POTASSIUM HYDROGEN OXALATE		
CAS 127-96-8	55-72	Acute Tox. 4 H302, Acute Tox. 4 H312, Note A
EC 204-874-6		
INDEX 607-007-00-3		
Reg. no. 01-2119979573-22-0002		
OXALIC ACID		
CAS 6153-56-6	1-4,5	Acute Tox. 4 H302, Acute Tox. 4 H312, Eye Dam. 1 H318
EC 205-634-3		
INDEX 607-006-00-8		
Reg. no. 01-2119534576-33		

The full wording of hazard (H) phrases is given in section 16 of the sheet.

SECTION 4. First aid measures**4.1. Description of first aid measures**

EYES: Remove contact lenses, if present. Wash immediately with plenty of water for at least 15 minutes, opening the eyelids fully. If problem persists, seek medical advice.

SKIN: Remove contaminated clothing. Wash immediately with plenty of water. If irritation persists, get medical advice/attention. Wash contaminated clothing before using it again.

INHALATION: Remove to open air. In the event of breathing difficulties, get medical advice/attention immediately.

INGESTION: Get medical advice/attention. Induce vomiting only if indicated by the doctor. Never give anything by mouth to an unconscious person, unless authorised by a doctor.

5X Gold

Revision nr. 1

Dated 03/08/2017

Polishing Powders

Printed on 03/08/2017

Page n. 3/16

4.2. Most important symptoms and effects, both acute and delayed

Specific information on symptoms and effects caused by the product are unknown.

POTASSIUM HYDROGEN OXALATE

Prolonged or repeated contact with skin can cause dermatitis. Inhalation can cause immediate nose and throat burning sensation, cough, breathlessness, sore throat.

4.3. Indication of any immediate medical attention and special treatment needed

See section 4.1.

SECTION 5. Firefighting measures**5.1. Extinguishing media****SUITABLE EXTINGUISHING EQUIPMENT**

The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.

UNSUITABLE EXTINGUISHING EQUIPMENT

None in particular.

5.2. Special hazards arising from the substance or mixture**HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE**

Do not breathe combustion products.

POTASSIUM HYDROGEN OXALATE

Combustion could cause the formation of caustic potassium oxide fumes.

5.3. Advice for firefighters**GENERAL INFORMATION**

Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS

Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

SECTION 6. Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

If there are no contraindications, spray powder with water to prevent the formation of dust.

Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

6.2. Environmental precautions

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

6.3. Methods and material for containment and cleaning up

Collect the leaked product and place it in containers for recovery or disposal. If the product is flammable, use explosion-proof equipment. If there are no contraindications, use jets of water to eliminate product residues.

Make sure the leakage site is well aired. Evaluate the compatibility of the container to be used, by checking section 10. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

6.4. Reference to other sections

Any information on personal protection and disposal is given in sections 8 and 13.

SECTION 7. Handling and storage**7.1. Precautions for safe handling**

Before handling the product, consult all the other sections of this material safety data sheet. Avoid leakage of the product into the environment. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat.

5X Gold

Revision nr. 1

Dated 03/08/2017

Polishing Powders

Printed on 03/08/2017

Page n. 4/16

7.2. Conditions for safe storage, including any incompatibilities

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Keep containers away from any incompatible materials, see section 10 for details.

7.3. Specific end use(s)

See section 1.2.

SECTION 8. Exposure controls/personal protection**8.1. Control parameters**

Regulatory References:

EU	OEL EU	Directive (EU) 2017/164; Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC; Directive 91/322/EEC.
	TLV-ACGIH	ACGIH 2016

POTASSIUM HYDROGEN OXALATE**Threshold Limit Value**

Type	Country	TWA/8h mg/m3	ppm	STEL/15min mg/m3	ppm	
TLV-ACGIH		1		2		ACGIH 1990-1991

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,1622	mg/l
Normal value in marine water	0,01622	mg/l
Normal value for water, intermittent release	1,622	mg/l
Normal value of STP microorganisms	1550	mg/l

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers	Effects on workers
Oral		1,14 mg/kg bw/d
Inhalation		4,03 mg/m3
Skin	0,35 mg/cm2	1,14 mg/kg bw/d 0,69 mg/cm2 2,29 mg/kg bw/d

OXALIC ACID**Threshold Limit Value**

Type	Country	TWA/8h mg/m3	ppm	STEL/15min mg/m3	ppm
OEL	EU	1			
TLV-ACGIH		1		2	

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,1622	mg/l
Normal value in marine water	0,01622	mg/l
Normal value for water, intermittent release	1,622	mg/l
Normal value of STP microorganisms	1550	mg/l

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers	Effects on workers

5X Gold

Revision nr. 1

Dated 03/08/2017

Polishing Powders

Printed on 03/08/2017

Page n. 5/16

Oral		1,14 mg/kg bw/d		
Inhalation				4,03 mg/m3
Skin	0,35 mg/cm2	1,14 mg/kg bw/d	0,69 mg/cm2	2,29 mg/kg bw/d

Legend:

(C) = CEILING ; INHAL = Inhalable Fraction ; RESP = Respirable Fraction ; THORA = Thoracic Fraction.

VND = hazard identified but no DNEL/PNEC available ; NEA = no exposure expected ; NPI = no hazard identified.

8.2. Exposure controls

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration.

When choosing personal protective equipment, ask your chemical substance supplier for advice.

Personal protective equipment must be CE marked, showing that it complies with applicable standards.

Provide an emergency shower with face and eye wash station.

HAND PROTECTION

In the case of prolonged contact with the product, protect the hands with penetration-resistant work gloves (see standard EN 374).

Work glove material must be chosen according to the use process and the products that may form. Latex gloves may cause sensitivity reactions.

Long term exposure – Butyl safety gloves

Short term exposure – Nitrile gloves

SKIN PROTECTION

Wear category II professional long-sleeved overalls and safety footwear (see Directive 89/686/EEC and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

Skin protection: acid-resistant clothes

EYE PROTECTION

Wear a hood visor or protective visor combined with airtight goggles (see standard EN 166).

In the presence of risks of exposure to splashes or squirts during work, adequate mouth, nose and eye protection should be used to prevent accidental absorption.

RESPIRATORY PROTECTION

See the attached exposure scenario.

ENVIRONMENTAL EXPOSURE CONTROLS

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

SECTION 9. Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Appearance	solid powder
Colour	bianco - giallo
Odour	odourless
Odour threshold	Not available
pH	Not available
Melting point / freezing point	Not available
Initial boiling point	Not available
Boiling range	Not available
Flash point	> 60 °C
Evaporation rate	Not available
Flammability (solid, gas)	Not available
Lower flammability limit	Not available
Upper flammability limit	Not available
Lower explosive limit	Not available
Upper explosive limit	Not available
Vapour pressure	Not available

5X Gold

Revision nr. 1

Dated 03/08/2017

Polishing Powders

Printed on 03/08/2017

Page n. 6/16

Vapour density	Not available
Relative density	Not available
Solubility	partially soluble
Partition coefficient: n-octanol/water	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available
Viscosity	Not available
Explosive properties	Not available
Oxidising properties	Not available

9.2. Other information

Information not available

SECTION 10. Stability and reactivity**10.1. Reactivity**

Saturated aqueous solutions behave like medium-strong acids.

There are no particular risks of reaction with other substances in normal conditions of use.

POTASSIUM HYDROGEN OXALATE

In case of contact with hot surfaces or flames, this substance decomposes creating formic acid and carbon monoxide. Solution in water is a medium-strong acid.

OXALIC ACID

Decomposes at temperatures above 157°C/315°F.

10.2. Chemical stability

The product is stable in normal conditions of use and storage.

10.3. Possibility of hazardous reactions

No hazardous reactions are foreseeable in normal conditions of use and storage.

Possible emission of toxic vapors by heating over decomposition point.

Reaction with strong oxidizer.

POTASSIUM HYDROGEN OXALATE

It strongly reacts with strong oxidizers and may cause fire and explosions. It reacts with some silver compounds creating explosive silver oxalate. It attacks some type of plastic.

OXALIC ACID

May form explosive mixtures with: oxidizing substances. Reacts violently developing heat on contact with: alkaline metals, ammonia, mercury, furfuryl alcohol, chlorates, hypochlorites. Risk of explosion on contact with: sodium chlorite, silver.

10.4. Conditions to avoid

Avoid accumulation of dust.

OXALIC ACID

Avoid contact with oxidizers. It strongly reacts with furfuryl alcohol, silver, sodium chloride and sodium hypochlorite.

10.5. Incompatible materials**POTASSIUM HYDROGEN OXALATE**

Alkaline solutions, ammonia, halogenated, oxidizers, metals.

Water.

OXALIC ACID

Incompatible with: strong oxidants, metals, alkaline metals, furfurylic acid, chlorine compounds.

5X Gold

Revision nr. 1

Dated 03/08/2017

Polishing Powders

Printed on 03/08/2017

Page n. 7/16

10.6. Hazardous decomposition products

Carbon monoxide, carbon dioxide, formic acid.

POTASSIUM HYDROGEN OXALATE

Formic acid, Carbon Dioxide, Carbon monoxide, Silver Oxalate, Potassium Oxide.

OXALIC ACID

May develop: carbon oxides.

SECTION 11. Toxicological information

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification.

It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

11.1. Information on toxicological effectsMetabolism, toxicokinetics, mechanism of action and other information

Information not available

Information on likely routes of exposure

Information not available

Delayed and immediate effects as well as chronic effects from short and long-term exposure**POTASSIUM HYDROGEN OXALATE**

Immediate effects

First effect on health is local irritation due to change of pH. So absorption is not relevant for effects evaluation

Chronic effects

Repeated dose oral toxicity: LOAEL = 150 mg/kg bw/day (Read-across - OECD 407 - Repeated Dose 28-Day Oral Toxicity in Rodents).

Repeated dose dermal toxicity: not relevant, skin absorption is not significant.

Repeated dose inhalation toxicity: not considerable.

Interactive effects

Information not available

ACUTE TOXICITY

Acute toxicity data of the mixture have been calculated with formula as per point 3.1.3.6.1. of Attachment I of CLP Regulations not they are Acute Toxicity Estimate (ATE).

ATE (Inhalation) of the mixture: Not classified (no significant component)

ATE (Oral) of the mixture: 556 mg/kg

ATE (Dermal) of the mixture: 1630 mg/kg

POTASSIUM HYDROGEN OXALATE

LD50 (Oral) > 375 mg/kg Rat (female); according to method Smyth et al. (1962)

LD50 (Dermal) > 20000 mg/kg Rabbit; Pesticide Action Network (PAN) Database 2010

OXALIC ACID

LD50 (Oral) > 375 mg/kg Rat (female); according to method Smyth et al. (1962)

LD50 (Dermal) > 20000 mg/kg Rabbit; Pesticide Action Network (PAN) Database 2010

SKIN CORROSION / IRRITATION

Does not meet the classification criteria for this hazard class

POTASSIUM HYDROGEN OXALATE

Potassium trihydrogen dioxalate is not irritant on skin (method QSAR in silico).

OXALIC ACID

Species: Rabbit

Exposure time: 4 h

Result: No skin irritation Classification: non irritant

Method: Guide Line 404 for OECD BPL test: yes.

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye damage

POTASSIUM HYDROGEN OXALATE

5X Gold

Revision nr. 1

Dated 03/08/2017

Polishing Powders

Printed on 03/08/2017

Page n. 8/16

Potassium trihidrogen dioxalate is not irritant (OECD 460, in vitro).

OXALIC ACID

Species: eye of rabbit

Result: Risk of serious eye injuries. Classification: Risk of serious eye injuries. Method: Guide Line 405 for OECD Test BPL: yes.

RESPIRATORY OR SKIN SENSITISATION

Does not meet the classification criteria for this hazard class

OXALIC ACID

Species: Mouse

Result: non sensitizing

Method: Guide Line 405 for OECD BPL Test: yes.

Skin sensitization**POTASSIUM HYDROGEN OXALATE**

Potassium trihidrogen dioxalate is not skin sensitizing (OECD 429 - Skin Sensitisation: Local Lymph Node Assay).

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

POTASSIUM HYDROGEN OXALATE

Bacterial mutation test (Ames test, OECD 471): Negative.

Mammalian Chromosome Aberration Test (OECD 473 - In Vitro Mammalian Chromosome Aberration Test): Negative.

The substance has not genotoxic effects.

OXALIC ACID

Test: method Ames

Species: Salmonella typhimurium. Metabolic Activation: with and without

Method: Guide Line 471 for Test OECD Result: Negative with and without metabolic activation

BPL: no data available

Test: Chromosome Aberration Test

Species: Cell V79 (lungs embryonic fibroblast) of chinese hamster

Metabolic activation: without

Method: Guide Line 473 for Test OECD Result: negative

BPL: No data available

The product is not mutagenic

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

POTASSIUM HYDROGEN OXALATE

The substance is not considered carcinogenic

OXALIC ACID

non determined.

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

OXALIC ACID

No reproductive toxicity

Adverse effects on sexual function and fertility**POTASSIUM HYDROGEN OXALATE**

The substance is not toxic for reproduction (experimental data on mice, OECD 416 - Two-Generation Reproduction Toxicity Study).

STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

OXALIC ACID

No data available.

STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

OXALIC ACID

Rat:

LOAEL: 150 mg/kg

Metodo: Guide Line 407 for Test OECD BPL: yes.

5X Gold

Revision nr. 1

Dated 03/08/2017

Polishing Powders

Printed on 03/08/2017

Page n. 9/16

ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

OXALIC ACID

No data available.

SECTION 12. Ecological information

Use this product according to good working practices. Avoid littering. Inform the competent authorities, should the product reach waterways or contaminate soil or vegetation.

12.1. ToxicityPotassium trihydrogendioxalate

LC50 – fish	160 mg/l/48h <i>Leuciscus idus melanotus</i> ; in accordo con il metodo Deutsche Einheitsverfahren zur Wasser, Abwasser und Schlamm-Untersuchung L 15 Fischtest.
EC50 - shellfish	162,2 mg/l/48h <i>Daphnia magna</i> ; in accordo con il metodo OECD 202
Effect threshold – Aquatic algae	80 mg/l/8d <i>Microcystis aeruginosa</i> ; Fonte bibliografica Mitt. Internat. Verein. Limnol. 21: 275-284 (1978).
Effect threshold – Microorganisms	1550 mg/l/16h <i>Pseudomonas putida</i> ; Fonte bibliografica Water Research 14: 231-241 (1980).
LD50 – terrestrial arthropods	176,68 ug/ape/48h <i>Apis mellifera</i> ; Fonte bibliografica J. Econ. Entomol. 5: 1579-1582 (2006).
EC50 – terrestrial plants	8 mM/72h <i>Lactuca sativa</i> ; in accordo con metodo Reynolds T. (1975) Characterization of osmotic restraints on lettuce fruit germination.

Oxalic acid

LC50 – fish	160 mg/l/48h <i>Leuciscus idus melanotus</i> ; in accordo con il metodo Deutsche Einheitsverfahren zur Wasser, Abwasser und Schlamm-Untersuchung L 15 Fischtest.
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LD50 – terrestrial arthropods	176,68 ug/ape/48h <i>Apis mellifera</i> ; Fonte bibliografica J. Econ. Entomol. 5: 1579-1582 (2006).
EC50 – terrestrial plants	8 mM/72h <i>Lactuca sativa</i> ; in accordo con metodo Reynolds T. (1975) Characterization of osmotic restraints on lettuce fruit germination.

12.2. Persistence and degradabilityPotassium trihydrogendioxalate

Solubility in water 53170 mg/l (Campbell's solubility apparatus)

Rapidamente degradabile: 89% (consumo O₂) in 20d (metodo equivalente o simile a EU C.5)Degradazione nel suolo: fino al 73% in 30 giorni a 20 °C (evoluzione della CO₂); Fonte bibliografica J. Geochem. Explor. 65(1):17-25 (1998).

oxalic acid

Solubility in water 100000 mg/l (Campbell's solubility apparatus).

Rapidamente degradabile: 89% (consumo O₂) in 20d (metodo equivalente o simile a EU C.5)Degradazione nel suolo: fino al 73% in 30 giorni a 20 °C (evoluzione della CO₂); Fonte bibliografica J. Geochem. Explor. 65(1):17-25 (1998).**12.3. Bioaccumulative potential**

POTASSIUM HYDROGEN

OXALATE

Partition coefficient: n-octanol/water -1,7 LogKow; in accordo con il metodo OECD Guideline 107

5X Gold

Revision nr. 1

Dated 03/08/2017

Polishing Powders

Printed on 03/08/2017

Page n. 10/16

OXALIC ACID

Partition coefficient: n-octanol/water

-1,7 LogKow; in accordo con il metodo OECD Guideline 107

12.4. Mobility in soil

Information not available

12.5. Results of PBT and vPvB assessment

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

12.6. Other adverse effects

Information not available

SECTION 13. Disposal considerations**13.1. Waste treatment methods**

Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.

Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.

CONTAMINATED PACKAGING

Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

SECTION 14. Transport information

The product is not dangerous under current provisions of the Code of International Carriage of Dangerous Goods by Road (ADR) and by Rail (RID), of the International Maritime Dangerous Goods Code (IMDG), and of the International Air Transport Association (IATA) regulations.

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 Marpol and the IBC Code

Information not relevant

SECTION 15. Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

Seveso Category - Directive 2012/18/EC: None

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006

None

5X Gold

Revision nr. 1

Dated 03/08/2017

Polishing Powders

Printed on 03/08/2017

Page n. 11/16

Substances in Candidate List (Art. 59 REACH)

On the basis of available data, the product does not contain any SVHC in percentage greater than 0,1%.

Substances subject to authorisation (Annex XIV REACH)

None

Substances subject to exportation reporting pursuant to (EC) Reg. 649/2012:

None

Substances subject to the Rotterdam Convention:

None

Substances subject to the Stockholm Convention:

None

Healthcare controls

Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

15.2. Chemical safety assessment

Chemical safety assessment has been processed as per section 3.2.

SECTION 16. Other information

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

Acute Tox. 4	Acute toxicity, category 4
Eye Dam. 1	Serious eye damage, category 1
H302	Harmful if swallowed.
H302+H312	Harmful if swallowed or in contact with skin.
H312	Harmful in contact with skin.
H318	Causes serious eye damage.

LEGEND:

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- CAS NUMBER: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE NUMBER: Identifier in ESIS (European archive of existing substances)
- CLP: EC Regulation 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX NUMBER: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: EC Regulation 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA STEL: Short-term exposure limit
- TWA: Time-weighted average exposure limit

5X Gold

Revision nr. 1

Dated 03/08/2017

Polishing Powders

Printed on 03/08/2017

Page n. 12/16

- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation
- WGK: Water hazard classes (German).

GENERAL BIBLIOGRAPHY

1. Regulation (EU) 1907/2006 (REACH) of the European Parliament
 2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
 3. Regulation (EU) 790/2009 (I Atp. CLP) of the European Parliament
 4. Regulation (EU) 2015/830 of the European Parliament
 5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
 6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
 7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
 8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
 9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
 10. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament
 11. Regulation (EU) 2016/918 (VIII Atp. CLP) of the European Parliament
- The Merck Index. - 10th Edition
 - Handling Chemical Safety
 - INRS - Fiche Toxicologique (toxicological sheet)
 - Patty - Industrial Hygiene and Toxicology
 - N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
 - IFA GESTIS website
 - ECHA website
 - Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy

Note for users:

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.

This document must not be regarded as a guarantee on any specific product property.

The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.

Provide appointed staff with adequate training on how to use chemical products.

Changes to previous review:

Revision n. 0 is the first version of this SDS.

Revision n. 1 modifies sections 1, 4, 8, 11, 12, 15, 16.

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Revision nr. 1

Dated 03/08/2017

Polishing Powders

Printed on 03/08/2017

Page n. 13/16

ANNEX: EXHIBITION SCENARIO

This document covers all occupational and environmental exposure (ES) scenarios for the production and use of potassium trihydrogen dioxalate as required by the REACH Regulation (Regulation (EC) No. 1907/2006). The regulation and the relevant ECHA guide were taken into account for the development of the ES. The following were used: the guide "R.12 - Use descriptor system" (Version: 2, March 2010, ECHA-2010-G-05-EN) for the description of the uses covered, the guide "R.13 - Risk management measures" (Version: 1.1, May 2008), for the description and implementation of risk management measures (RMM), the guide "R.14 - Occupational exposure estimation" guidance (Version: 2, May 2010, ECHA-2010 -G-09-EN, for the estimation of occupational exposure, the guide, for the estimation of occupational exposure, and the guide "R.16 - Environmental Exposure Assessment" (Version: 2, May 2010, ECHA-10- G-06-EN) for environmental exposure assessment A summary of the relevant scenarios is reported in table 1.

ES number	ES name	Identified uses			Life cycle		Sector of use (SU)	Product Categories (PC)	Process Categories (PROC)	Article categories (AC)	ERC
		Formulation	End use	Consumer use	Life cycle for articles	Waste					
1	Professional use of the product	X	X				SU0	PC9a PC15 PC31 PC35 PC0	PROC8b PROC9 PROC10 PROC15 PROC21		ERC8a ERC8b ERC8c ERC8d ERC8e ERC8f

Table 1

5X Gold

Revision nr. 1

Dated 03/08/2017

Polishing Powders

Printed on 03/08/2017

Page n. 14/16

1. Professional use of solid potassium trihydrogen dioxalate**1. Title**

Short title	Professional use of solid potassium trihydrogen dioxalate	
ES number	1	
Systematic title based on the use descriptors	Sectors of use SU0: Polishing and cleaning of marble. Surface treatment	
	Product categories PC9a: Coatings and paints, thinners, pickling solutions PC15: Products for the treatment of non-metallic surfaces PC31: Polishes and wax mixtures PC35: Cleaning and washing products PC0: Surface polishing.	
	Process categories PROC8b: Transfer of a substance or mixture (filling / emptying) to dedicated facilities PROC9: Transfer of a substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Application with rollers or brushes PROC15: Use as laboratory reagent PROC21: Low energy handling of incorporated substances or of coating materials and / or articles.	
	Environmental release categories ERC8a: Generalized use of non-reactive technological adjuvants (without inclusion in or on the surface of an article, use indoors) ERC8b: Generalized use of reactive technological adjuvants (without inclusion in or on the surface of an article, use indoors) ERC8c: Generalized use with consequent inclusion within or on the surface of an article (use in interiors) ERC8d: General use of non-reactive technological adjuvants (without inclusion in or on the surface of an article, use outdoors) ERC8e: Generalized use of reactive technological adjuvants (without inclusion within or on the surface of an article, use outdoors) ERC8f: Generalized use with consequent inclusion within or on the surface of an article (use outdoors).	
Processes, and / or activities covered	The processes and / or activities covered are described in section 2 below.	
Evaluation method	The assessment of inhalation, dermal and environmental exposure is based on the ECETOC TRA model.	

2. Operating conditions and risk management measures

PROC8b, PROC9, PROC10, PROC15, PROC21	Transfer of a substance or mixture (filling / emptying) to dedicated facilities or in small containers. Surface treatment. Use as a laboratory reagent.	Further information is provided in the ECHA "Guidance on information requirements and chemical safety assessment, Chapter R.12: Use descriptor system (ECHA-2010-G-05-EN, 26/03/2010)".
ERC8a, ERC8b, ERC8c, ERC8d, ERC8e, ERC8f	General use of reactive and less technological adjuvants with or without inclusion within or on the surface of an article, for indoor and outdoor use.	

2.1 Control of worker exposure**Product characteristic**

PROC	Use in mixture?	Concentration in mixture	Emission potential
All foreseen PROCs	Not excluded	>25% w/w (no specific prescription)	low

Amount used

The actual tonnage managed per shift does not affect the exposure for this scenario. Instead, the combination of the activity scale (professional vs. industrial) and the containment / automation level (as indicated in the PROC) is the main determinant of the intrinsic emission potential of the process.

Frequency and duration of use / exposure

All foreseen PROCs	> 4 hours (no specific prescription)
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5X Gold

Revision nr. 1

Dated 03/08/2017

Polishing Powders

Printed on 03/08/2017

Page n. 15/16

Technical conditions and measures, at process level (source), to prevent release

Process-level risk management measures (eg containment or segregation of the source of emission) are generally not necessary.

Technical conditions and measures to control dispersion from the source towards the workers

PROC	Separation level	Localized controls (LC)	LC efficiency (according to ECETOC TRA)	Further information
All foreseen PROCs	The separation of workers is not required, in the processes, unless a specific phase of the process is less than the entire shift. In this case it must be guaranteed that the worker is separated from the emission source for the remaining round.	Local Exhaust Ventilation (LEV)	--	--

Organizational measures to prevent / limit releases, dispersion and exposure

Avoid inhalation or ingestion. General occupational hygiene measures are required to ensure safe handling of the substance. These measures include qualified personnel and good cleaning practices (eg regular cleaning with appropriate cleaning devices), not eating and smoking in the workplace, the use of work clothes and shoes, unless otherwise indicated below. Take a shower and change clothes at the end of the work shift. Do not wear contaminated clothing at home. Do not blow dust with compressed air.

Conditions and related measures for personal protection and hygiene and health assessment

PROC	Respiratory protection specifications and efficiency	Glove specifications	Eye protection specifications	Additional PPE
All foreseen PROCs	Not required	Use suitable gloves (Nitrile, Neoprene, Natural rubber, Polyvinyl chloride: Permeation, breakage > 360 min). Protective clothing.	Since potassium trihydrogen dioxalate can be irritating to the eyes, the use of face shields or eye protection is a requirement for all process steps.	Common work clothes

2.2 Control of environmental exposure**Amounts used**

1 kg/day

Frequency and duration of use

Intermittent (<12 times a year) or continuous

Conditions and in situ technical measures to reduce or limit discharges, emissions into the air and release into the soil.

Environmental risk management measures aim to avoid discharging potassium trihydrogen dioxalate solutions into municipal wastewater or surface water.

Conditions and measures relating to waste

Potassium trihydrogen dioxalate wastes should not be disposed of with household waste. Do not allow the product to reach the sewage system.

3. Estimation of exposure and reference to the source**Occupational exhibition**

The ECTOC TRA model was used for the assessment of inhalation and dermal exposure of workers. Given the similarity between potassium trihydrogen dioxalate and oxalic acid, the risk characterization ratio (RCR) for inhalation exposure is based on the inhaled DNEL value of oxalic acid (2.29 mg/kg/day) and the ratio risk characterization (RCR) for dermal exposure is based on the dermal DNEL value of oxalic acid (4.03 mg/kg/day).

5X Gold

Revision nr. 1

Dated 03/08/2017

Polishing Powders

Printed on 03/08/2017

Page n. 16/16

PROC	Method used for the assessment of inhalation exposure	Estimation of inhalation exposure mg / m ³ (RCR)	Method used for the assessment of dermal exposure	Estimation of dermal exposure mg / kg / day (RCR)
PROC8b	ECETOC TRA	0.100 (0.006)	ECETOC TRA	0.686 (0.170)
PROC9	ECETOC TRA	0.100 (0.006)	ECETOC TRA	0.686 (0.170)
PROC10	ECETOC TRA	0.100 (< 0.01)	ECETOC TRA	1.372 (0.340)
PROC15	ECETOC TRA	0.020 (0.001)	ECETOC TRA	0.034 (0.009)
PROC21	ECETOC TRA	0.600 (0.037)	ECETOC TRA	0.283 (0.070)

Environmental exposure

The high solubility in water and the very low vapor pressure indicate that potassium trihydrogen dioxalate is found mainly in water. No significant air emissions or exposures are expected due to low steam pressure. No significant emissions or exposures are foreseen for the terrestrial environment due to this exposure scenario.

Estimation of local exposure in freshwater	ERC8a (RCR)	ERC8b (RCR)	ERC8c (RCR)	ERC8d (RCR)	ERC8e (RCR)	ERC8f (RCR)
	0.179	0.013	0.011	0.179	0.013	0.011

Estimation of exposure in the pelagic aquatic compartment When potassium trihydrogen dioxalate is released into surface water, adsorption to particulates and sediments is negligible. When the potassium trihydrogen dioxalate is discharged to surface waters, the pH may decrease, depending on the buffer capacity of the water. The greater the water buffer capacity, the lower the effect on pH.

Estimation of exposure in sediments The sedimentary compartment is not included in this ES, because it is not considered relevant for potassium trihydrogen dioxalate: when potassium trihydrogen dioxalate is injected into the aquatic compartment, adsorption to particulates and sediments is negligible.

Estimation of exposure in soil and groundwater The land sector is not included in this exposure scenario, because it is not considered relevant.

Estimation of exposure in the atmospheric compartment The atmospheric compartment is not included in this CSA, because it is not considered relevant for potassium trihydrogen dioxalate.

Estimation of exposure relevant to the food chain (secondary poisoning) Bioaccumulation in organisms is not relevant for potassium trihydrogen dioxalate: therefore a risk assessment for secondary poisoning is not necessary.

4. Guide for DUs to assess whether they operate within the conditions set by the ES**Workers**

The DU operate within the conditions set by the ES if the risk management measures described above are implemented or if they can demonstrate that their operating conditions and risk management measures are adequate. This must be done by demonstrating that the limits of inhalation or dermal exposure are below the respective DNEL values provided below (given that the processes and activities in question are covered by the PROCs listed above). If direct exposure measurements are not available, DUs must perform scaling with an appropriate ECETOC TRA model (www.ecetoc.org/tra) to assess the exposure. For the potassium trihydrogen dioxalate the values of oxalic acid can be assumed:
DNEL inhalation for oxalic acid 2.29 mg/kg/day
Dermal DNEL for oxalic acid 4.03 mg/kg/day

Environment

If a site does not comply with the conditions identified in the safe use scenario, it is recommended to apply a subsequent step approach (tiered) to make a site-specific assessment as possible.