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MATERIAL SAFETY DATA SHEET (MSDS)

CHROMIUM TRIOXIDE (FLAKES) (CHROMIC ACID)

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

1.1. Product identifier

Trade name : CHROMIUM TRIOXIDE (FLAKES) (CHROMIC ACID)

Product code : C0070100500

Identification of the product : Chromium trioxide
 CAS No :1333-82-0
 EC No :215-607-8
 Annex No :024-001-00-0

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

Use : Industrial. For professional use only.

1.3. Details of the supplier of the safety data sheet

Company identification SUVCHEM
 Chaitanya Tower, 2nd Floor, Office # 206,
 Siddharth Nagar, S.V. Road,
 Goregaon (West), Mumbai - 400062,
 Maharashtra, India.
 Contact: +91 22 28725393 / 94 / 95
 Email ID: info@suvchem.com/care@suvchem.com

1.4. Emergency telephone number

Phone no. : + 91 22 28725393 / 94 / 95 (9:00am - 6:00 pm) [Office hours]

2. Hazards identification -DSD

2.1. Classification of the substance or mixture

Classification EC 67/548 or EC 1999/45

Classification : O; R9
 Carc. Cat. 1; R45
 Muta. Cat. 2; R46
 Repr. Cat. 3; R62
 T+; R26
 T; R24/25-R48/23
 C; R35
 Xn ; R42/43
 N; R50-53

Hazard Class and Category Code(s), Regulation (EC) No 1272/2008 (CLP)

Health hazards : Carcinogenicity - Category 1A - Danger (CLP : Carc. 1A) H350
 Reproductive toxicity - Fertility - Category 2 - Warning (CLP : Repr. 2) H361
 Specific Target Organ Toxicity - Repeated exposure - Category 1 - Danger (CLP :

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2. Hazards identification -DSD (continued)

| | |
|------------------------------|---|
| | STOT RE 1) H372 |
| | Skin sensitisation - Category 1 - Warning (CLP : Skin Sens. 1) H317 |
| | Respiratory sensitization - Category 1 - Danger (CLP : Resp. Sens. 1) H334 |
| | Acute toxicity, dermal - Category 3 - Danger (CLP : Acute Tox. 3) H311 |
| | Germ cell mutagenicity - Category 1B - Danger (CLP : Muta. 1B) H340 |
| | Acute toxicity, Oral - Category 3 - Danger (CLP : Acute Tox. 3) H301 |
| | Skin corrosion - Category 1A - Danger (CLP : Skin Corr. 1A) H314 |
| | Acute toxicity, Inhalation - Category 2 - Danger (CLP : Acute Tox. 2) H330 |
| Physical hazards | : Oxidizing solids - Category 1 - Danger (CLP : Ox. Sol. 1) H271 |
| Environmental hazards | : Hazardous to the aquatic environment - Acute hazard - Category 1 - Warning (CLP : Aquatic Acute 1) H400 |
| | Hazardous to the aquatic environment - Chronic hazard - Category 1 - Warning (CLP : Aquatic Chronic 1) H410 |

2.2. Label elements

Labelling EC 67/548 or EC 1999/45

Symbol(s)



Symbol(s)

: O : Oxidizing
 T+ : Very toxic
 N : Dangerous for the environment

R Phrase(s)

: R45 : May cause cancer.
 R46 : May cause heritable genetic damage.
 R9 : Explosive when mixed with combustible material.
 R24/25 : Toxic in contact with skin and if swallowed.
 R26 : Very toxic by inhalation.
 R35 : Causes severe burns.
 R42/43 : May cause sensitization by inhalation and skin contact.
 R48/23 : Toxic : danger of serious damage to health by prolonged exposure through inhalation.
 R62 : Possible risk of impaired fertility.
 R50/53 : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S Phrase(s)

: S53 : Avoid exposure - obtain special instructions before use.
 S45 : In case of accident or if you feel unwell, seek medical advice immediately (show the label when possible).
 S60 : This material and its container must be disposed of as hazardous waste.
 S61 : Avoid release to the environment. Refer to special instructions/Safety data sheets.

Contains

: Chromium trioxide

Labelling Regulation EC 1272/2008 (CLP)

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CHROMIUM TRIOXIDE (FLAKES) (CHROMIC ACID)

2. Hazards identification -DSD (continued)

Hazard pictograms



Signal words

: Danger

Hazard statements

: H271 : May cause fire or explosion; strong oxidizer.
 H330 : Fatal if inhaled.
 H314 : Causes severe skin burns and eye damage.
 H301 : Toxic if swallowed.
 H311 : Toxic in contact with skin.
 H350 : May cause cancer.
 H340 : May cause genetic defects.
 H361f : Suspected of damaging fertility.
 H334 : May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 H317 : May cause an allergic skin reaction.
 H372 : Causes damage to organs through prolonged or repeated exposure.
 H410 : Very toxic to aquatic life with long lasting effects.

Precautionary statements

• General

: P201: Obtain special instructions before use.

• Prevention

: P210: Keep away from heat, sparks, open flames or hot surfaces. - No smoking.
 P284: Wear respiratory protection.
 P280: Wear protective gloves, protective clothing, eye protection, face protection.
 P271: Use only outdoors or in a well-ventilated area.
 P260: Do not breathe dust, fume, gas, mist, vapours, spray.
 P273: Avoid release to the environment.
 P220: Keep away from clothing - combustible materials.
 P264: Wash thoroughly after handling.
 P270: Do not eat, drink or smoke when using this product.
 P272: Contaminated work clothing should not be allowed out of the workplace.

• Response

: P371+P380+P375: In case of major fire and large quantities : Evacuate area. Fight fire remotely due to the risk of explosion.
 P302+P352: IF ON SKIN : Wash with plenty of soap and water.
 P301+P330+P331: IF SWALLOWED : Rinse mouth. Do NOT induce vomiting.
 P308+P313: If exposed or concerned : get medical advice.
 P391: Collect spillage.
 P305+P351+P338: IF IN EYES : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P304+P340: IF INHALED : Remove to fresh air and keep at rest in a position comfortable for breathing.
 P303+P361+P353: IF ON SKIN (or hair) : Remove immediately all contaminated clothing. Rinse skin with water/shower.
 P306+P360: IF ON CLOTHING : Rinse immediately contaminated clothing and skin with plenty of water before removing clothes.
 P333+P313: If skin irritation or rash occurs : Get medical advice.
 P342+P311: If experiencing respiratory symptoms : Call a POISON CENTER or doctor.
 P363: Wash contaminated clothing before reuse.
 P314: Get medical advice if you feel unwell.
 P361: Remove immediately all contaminated clothing.

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CHROMIUM TRIOXIDE (FLAKES) (CHROMIC ACID)

2. Hazards identification -DSD (continued)

- Storage** : P370+P378: In case of fire: Use for extinction.
 : P403+P233: Store in well-ventilated place. Keep container tightly closed.
 P405: Store locked up.
- Disposal considerations** : P501: Dispose of this material and its container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.
- Special labelling** : Restricted to professional users. (Substances which appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008)
- Contains** : Chromium trioxide

2.3. Other hazards

- Other hazards** : The substance does not fulfil the criteria to be identified as PBT substance or vPvB substance according to Annex XIII of Regulation REACH.

3. Composition/information on ingredients

Substance / Preparation : Chromium trioxide
 CAS No :1333-82-0
 EC No :215-607-8
 Annex No :024-001-00-0
 Substance.

| Substance name | Contents | CAS No | EC No | Annex No | REACH Ref. | Classification |
|-------------------|----------|-----------|-----------|--------------|------------|--|
| Chromium trioxide | 100 % | 1333-82-0 | 215-607-8 | 024-001-00-0 | ---- | O; R9 Carc. Cat. 1; R45 Muta. Cat. 2; R46 Repr. Cat. 3; R62 T+; R26 T; R24/25-48/23 C; R35 R42/43 N; R50-53 ----- Ox. Sol. 1 _ H271 Carc. 1A _ H350 Muta. 1B _ H340 Acute Tox. 3 (skin) _ H311 Acute Tox. 2 (inhal) _ H330 Acute Tox. 3 (oral) _ H301 Skin Corr. 1A _ H314 STOT RE 1 _ H372 Resp. Sens. 1 _ H334 Repr. 2 _ H361F Skin Sens. 1 _ H317 Aquatic Acute 1 _ H400 Aquatic Chronic 1 _ H410 |

Contains no other components or impurities which will influence the classification of the product.

4. First aid measures

4.1. Description of first aid measures

- Inhalation** : Specific treatment is urgent (see on this label). Immediately call a POISON CENTER or doctor. If experiencing respiratory symptoms : Remove to fresh air and keep at rest in a position comfortable for breathing.

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4. First aid measures (continued)

- Skin contact** : Remove/Take off immediately all contaminated clothing. Specific treatment (see on this label). Immediately call a POISON CENTER or doctor. Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs : Rinse immediately contaminated clothing and skin with plenty of water before removing clothes. IF ON CLOTHING : Get medical advice.
- Eye contact** : Rinse cautiously with water for several minutes. Immediately call a POISON CENTER or doctor. Remove contact lenses, if present and easy to do. Continue rinsing.
- Ingestion** : Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor. Specific treatment (see on this label).

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

- Symptoms relating to use** : May cause cancer. May cause genetic defects.
 Causes damage to organs through prolonged or repeated exposure.
 Fatal if inhaled.
 Causes severe skin burns and eye damage.
 Suspected of damaging fertility.
 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 May cause an allergic skin reaction.
 Repeated exposure to this material can result in absorption through skin causing significant health hazard.
 Swallowing a small quantity of this material will result in serious health hazard.

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

- General information** : Never give anything by mouth to an unconscious person.
 If exposed or concerned : get medical advice.

5. Fire-fighting measures

5.1. Extinguishing media

- Suitable extinguishing media** : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
- Unsuitable extinguishing media** : Do not use a heavy water stream.
- Surrounding fires** : Use water spray or fog for cooling exposed containers.

5.2. Special hazards arising from the substance or mixture

- Flammable class** : May cause fire or explosion; strong oxidizer.
- Hazardous combustion products** : Under fire conditions, hazardous fumes will be present.
 Thermal decomposition generates : Corrosive vapours.

5.3. Advice for fire-fighters

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CHROMIUM TRIOXIDE (FLAKES) (CHROMIC ACID)

5. Fire-fighting measures (continued)

- Protection against fire** : Do not enter fire area without proper protective equipment, including respiratory protection.
- Special procedures** : Exercise caution when fighting any chemical fire. Avoid (reject) fire-fighting water to enter environment.
In case of major fire and large quantities : Evacuate area. Fight fire remotely due to the risk of explosion.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- For emergency responders** : Equip cleanup crew with proper protection.
Ventilate area.
- Special precautions** : No naked lights. No smoking.
May cause fire or explosion; strong oxidizer.
- For non-emergency personnel** : Evacuate unnecessary personnel.

6.2. Environmental precautions

- Environmental precautions** : Prevent entry to sewers and public waters. Notify authorities if product enters sewers or public waters.
Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

- Clean up methods** : On land, sweep or shovel into suitable containers. Minimize generation of dust.
Store away from other materials.

6.4. Reference to other sections

See section 8. Exposure controls/personal protection

7. Handling and storage

7.1. Precautions for safe handling

- Handling** : Take any precaution to avoid mixing with combustibles. Use only outdoors or in a well-ventilated area. Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Avoid contact during pregnancy or while nursing. Do not breathe dust, fume, gas, mist, vapours, spray. Obtain special instructions before use. Wash thoroughly after handling. Eliminate all ignition sources if safe to do so. Wash thoroughly after handling. Do not eat, drink or smoke when using this product.

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7. Handling and storage (continued)

Technical protective measures : Provide good ventilation in process area to prevent formation of vapour.
Proper grounding procedures to avoid static electricity should be followed.

7.2. Conditions for safe storage, including any incompatibilities

Storage : Keep only in the original container in a cool, well ventilated place. Keep in fireproof place. Keep container tightly closed.

Storage regulation : Comply with applicable regulations.

Storage - away from : Strong bases. Strong acids. Sources of ignition. Direct sunlight. Heat sources. Combustible material.

7.3. Specific end use(s)

Specific end use(s) : None.

8. Exposure controls/personal protection

8.1. Exposure controls

Personal protection : Avoid all unnecessary exposure.

- **Respiratory protection** : Wear respiratory protection.
- **Hand protection** : Wear protective gloves.
- **Skin protection** : Wear suitable protective clothing.
- **Eye protection** : Chemical goggles or face shield.
- **Others** : When using, do not eat, drink or smoke.
Wear fire, flame resistant, retardant clothing.

8.2. Control parameters

Occupational Exposure Limits : No data available.

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state at 20 °C : Solid.

Colour : Reddish brown

Odour : Odorless

Odour threshold : No data available.

pH value : Not applicable.

Melting point [°C] : 196 °C

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9. Physical and chemical properties (continued)

| | |
|--|------------------------|
| Decomposition point [°C] | : N/A |
| Critical temperature [°C] | : N/A |
| Auto-ignition temperature [°C] | : N/A |
| Flammability (solid, gas) | : N/A |
| Flash point [°C] | : N/A |
| Boiling point [°C] | : N/A |
| Initial boiling point [°C] | : N/A |
| Final boiling point [°C] | : N/A |
| Evaporation rate | : N/A |
| Vapour pressure [20°C] | : N/A |
| Vapour pressure mm/Hg | : N/A |
| Vapour density | : N/A |
| Density [g/cm ³] | : 2,7 |
| Relative density, gas (air=1) | : N/A |
| Relative density, liquid (water=1) | : N/A |
| Solubility in water [% weight] | : 63g/100g water @ 200 |
| Solubility in water | : N/A |
| Log Pow octanol / water at 20°C | : No data available. |
| Solubility | : N/A |
| Viscosity at 40°C [mm ² /s] | : N/A |

9.2. Other information

| | |
|------------------------------|---|
| Explosive properties | : N/A |
| Explosion limits - upper [%] | : N/A |
| Explosion limits - lower [%] | : N/A |
| Oxidising properties | : May cause fire or explosion; strong oxidizer. |

10. Stability and reactivity

10.1. Reactivity

| | |
|------------|--------------------|
| Reactivity | : Not established. |
|------------|--------------------|

10.2. Chemical stability

| | |
|--------------------|--|
| Chemical stability | : Stable under recommended storage conditions. |
|--------------------|--|

10.3. Possibility of hazardous reactions

| | |
|---------------------|--------------------|
| Hazardous reactions | : Not established. |
|---------------------|--------------------|

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CHROMIUM TRIOXIDE (FLAKES) (CHROMIC ACID)

10. Stability and reactivity (continued)

10.4. Conditions to avoid

Conditions to avoid : Direct sunlight. Extremely high or low temperatures. Heat. Sparks. Overheating. Open flame.

10.5. Incompatible materials

Materials to avoid : Strong acids. Strong bases.

10.6. Hazardous decomposition products

Hazardous decomposition products : Fumes. Carbon monoxide. Carbon dioxide.
Thermal decomposition generates : Corrosive vapours.

11. Toxicological information

11.1. Information on toxicological effects

Acute toxicity

- **Inhalation** : Fatal if inhaled.
- **Dermal** : Toxic in contact with skin.
- **Ingestion** : Toxic if swallowed.

Corrosion : Causes severe skin burns and eye damage.

Irritation : Based on available data, the classification criteria are not met.

Sensitization : May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.

Mutagenicity : May cause genetic defects.

Carcinogenicity : May cause cancer.

Toxic for reproduction : Suspected of damaging fertility.

STOT-single exposure : Based on available data, the classification criteria are not met.

STOT-repeated exposure : Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard : Based on available data, the classification criteria are not met.

12. Ecological information

12.1. Toxicity

Toxicity information : Very toxic to aquatic life with long lasting effects.

12.2. Persistence - degradability

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12. Ecological information (continued)

Persistence - degradability : May cause long-term adverse effects in the environment.

12.3. Bioaccumulative potential

Bioaccumulative potential : Not established.

12.4. Mobility in soil

Mobility in soil : Not established.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment : The substance does not fulfil the criteria to be identified as PBT substance or vPvB substance according to Annex XIII of Regulation REACH.

12.6. Other adverse effects

Environmental precautions : Avoid release to the environment.

13. Disposal considerations

13.1. Waste treatment methods

General : Avoid release to the environment. Dispose in a safe manner in accordance with local/national regulations. Hazardous waste due to potential risk of explosion. Dispose of this material and its container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

Special precautions : Hazardous waste due to toxicity.

14. Transport information

14.1. Land transport (ADR-RID)

UN N° : 1463
H.I. nr : 58
ADR - Class : 5.1
Labelling - Transport : 5.1 : Oxidizing substances. 8 : Corrosive substance.



ADR - Classification code : OC2

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14. Transport information (continued)

ADR - Group : II

14.2. Sea transport (IMDG) [English only]

UN N° : 1463
 IMO-IMDG - Class or division : 5.1 : Oxidizing substances. (8 : Corrosive substance.)
 IMO-IMDG - Packing group : II

14.3. Air transport (ICAO-IATA) [English only]

UN N° : 1463
 IATA - Class or division : 5.1 : Oxidizing substances. (8 : Corrosive substance.)
 IATA - Packing group : II

15. Regulatory information

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

Safety, health and environmental regulations/legislation specific for the substance or mixture : Ensure all national/local regulations are observed.
 REACH Restrictions - Annex XVII : With the exception of those listed below:
 The components of this product are not subject to restrictions.
 Annex XVII
 REACH Authorisation - Annex XIV : The components of this product are not subject to authorization.

15.2. Chemical Safety Assessment

Chemical Safety Assessment : It has not been carried out.

16. Other information

Revision : Revision - See : *
 Abbreviations and acronyms : PBT: persistent, bioaccumulative and toxic.
 vPvB: very persistent and very bioaccumulative
 Sources of key data used : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006
 List of relevant R phrases (heading 3) : R9 : Explosive when mixed with combustible material.
 R24/25 : Toxic in contact with skin and if swallowed.
 R26 : Very toxic by inhalation.
 R35 : Causes severe burns.
 R42/43 : May cause sensitization by inhalation and skin contact.
 R45 : May cause cancer.

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In accordance with REACH Regulation (CE) N° 1907/2006 and with CLP Regulation (CE) N° 1272/2008

DISCLAIMER:

- **SUVCHEM** Products are to be used as Lab Chemicals for R&D only. Not for drug, medicinal, household or other uses.
- **SUVCHEM** shall not be responsible for any damage resulting from handling or from contact with the above product.
- **SUVCHEM** provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product.

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