

SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

SODIUM DICHROMATE ANHYDROUS

Version 12.0

Print Date 2021/01/20

Revision date / valid from 2021/01/20

MSDS code: MSDC100

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

1.1. Product identifier

Trade name : SODIUM DICHROMATE ANHYDROUS
Substance name : sodium dichromate
Index-No. : 024-004-00-7
CAS-No. : 10588-01-9
EC-No. : 234-190-3
EU REACH-Reg. No. : 01-2119435525-40-xxxx
REACH Auth. No.: : REACH/20/5/0, REACH/20/5/3, REACH/20/5/6

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

Use of the Substance/Mixture : Identified use: See table in front of appendix for a complete overview of identified uses.
Uses advised against : At this moment we have not identified any uses advised against
Remarks : Before referring to any Exposure Scenario attached to this Safety Data Sheet please check the grade of the product: the Exposure Scenarios presented are not related to all product grade

1.3. Details of the supplier of the safety data sheet

Company : Brenntag UK Limited
Alpha House, Lawnswood Business Park
GB LS16 6QY Leeds
Telephone : +44 (0) 113 3879 200
Telefax : +44 (0) 113 3879 280
E-mail address : msds@brenntag.co.uk

1.4. Emergency telephone number

Emergency telephone number : Emergency only telephone number (open 24 hours):
+44 (0) 1865 407333 (N.C.E.C. Culham)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

SODIUM DICHROMATE ANHYDROUS

REGULATION (EC) No 1272/2008			
Hazard class	Hazard category	Target Organs	Hazard statements
Oxidizing solids	Category 2	---	H272
Carcinogenicity	Category 1B	---	H350
Germ cell mutagenicity	Category 1B	---	H340
Reproductive toxicity	Category 1B	---	H360FD
Acute toxicity (Inhalation)	Category 2	---	H330
Acute toxicity (Dermal)	Category 4	---	H312
Acute toxicity (Oral)	Category 3	---	H301
Specific target organ toxicity - repeated exposure	Category 1	---	H372
Skin corrosion	Category 1B	---	H314
Respiratory sensitisation	Category 1	---	H334
Skin sensitisation	Category 1	---	H317
Specific target organ toxicity - single exposure	Category 3	Respiratory system	H335
Short-term (acute) aquatic hazard	Category 1	---	H400
Long-term (chronic) aquatic hazard	Category 1	---	H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

Most important adverse effects

Human Health : See section 11 for toxicological information.
 Physical and chemical hazards : See section 9/10 for physicochemical information.
 Potential environmental effects : See section 12 for environmental information.

2.2. Label elements**Labelling according to Regulation (EC) No 1272/2008**

Hazard symbols :



Signal word : Danger

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Hazard statements	:	H272 H301 H312 H314 H317 H330 H334 H335 H340 H350 H360FD H372 H410	May intensify fire; oxidizer. Toxic if swallowed. Harmful in contact with skin. Causes severe skin burns and eye damage. May cause an allergic skin reaction. Fatal if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. May cause genetic defects. May cause cancer. May damage fertility. May damage the unborn child. Causes damage to organs through prolonged or repeated exposure. Very toxic to aquatic life with long lasting effects.
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Precautionary statements

Prevention	:	P201 P260 P280 P284	Obtain special instructions before use. Do not breathe dust. Wear protective gloves/ protective clothing/ eye protection/ face protection. In case of inadequate ventilation wear respiratory protection.
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Response	:	P303 + P361 + P353 P304 + P340 + P310 P305 + P351 + P338 P308 + P313	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical advice/ attention.
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Additional Labelling:

Restricted to professional users.

Hazardous components which must be listed on the label:

- sodium dichromate

REACH Auth. No.: : REACH/20/5/0, REACH/20/5/3, REACH/20/5/6

2.3. Other hazards

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For Results of PBT and vPvB assessment see section 12.5.

SECTION 3: Composition/information on ingredients

3.1. Substances

Hazardous components	Amount [%]	Classification (REGULATION (EC) No 1272/2008)	
		Hazard class / Hazard category	Hazard statements
sodium dichromate			
Index-No. : 024-004-00-7	>= 90 - <= 100	Ox. Sol.2	H272
CAS-No. : 10588-01-9		Carc.1B	H350
EC-No. : 234-190-3		Muta.1B	H340
EU REACH- : 01-2119435525-40-xxxx		Repr.1B	H360FD
Reg. No.		Acute Tox.2	H330
REACH : REACH/20/5/0,		Acute Tox.4	H312
Auth. No.: REACH/20/5/3,		Acute Tox.3	H301
REACH/20/5/6		STOT RE1	H372
		Skin Corr.1B	H314
		Resp. Sens.1	H334
		Skin Sens.1	H317
	STOT SE3	H335	
	Aquatic Acute1	H400	
	Aquatic Chronic1	H410	

Remarks : This product contains a substance included in Annex XIV of Regulation EC No. 1907/2006 ('REACH') in a concentration $\geq 0.1\%$ w/w.

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice	: First aider needs to protect himself. Remove from exposure, lie down. Take off all contaminated clothing immediately.
If inhaled	: Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. Oxygen, if needed. No artificial respiration, mouth-to-mouth or mouth to nose. Use suitable instruments/apparatus. Call a physician immediately.
In case of skin contact	: Wash off immediately with soap and plenty of water. Call a physician immediately.
In case of eye contact	: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Consult an eye specialist immediately. Go to an ophthalmic hospital if possible.
If swallowed	: Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician immediately. Keep

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patient warm and at rest. If a person vomits when lying on his back, place him in the recovery position. Risk of aspiration!

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

Symptoms : See Section 11 for more detailed information on health effects and symptoms.

Effects : See Section 11 for more detailed information on health effects and symptoms.

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

Treatment : Treat symptomatically.

SECTION 5: Firefighting measures**5.1. Extinguishing media**

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. The product itself does not burn.

Unsuitable extinguishing media : High volume water jet

5.2. Special hazards arising from the substance or mixture

Specific hazards during firefighting : During fire may be released toxic vapours

Hazardous combustion products : Chromium oxides

5.3. Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus. Wear appropriate body protection (full protective suit)

Further advice : Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

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

Personal precautions : Use personal protective equipment. Keep people away from and upwind of spill/leak. Avoid dust formation. Avoid contact with skin and eyes. Do not breathe dust. Respirator must be worn if exposed to dust.

6.2. Environmental precautions

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Environmental precautions : Should not be released into the environment. If material reaches soil inform authorities responsible for such cases. If the product contaminates rivers and lakes or drains inform respective authorities.

6.3. Methods and materials for containment and cleaning up

Methods and materials for containment and cleaning up : Use mechanical handling equipment. Keep in suitable, closed containers for disposal.

Further information : Treat recovered material as described in the section "Disposal considerations".

6.4. Reference to other sections

See Section 1 for emergency contact information.
See Section 8 for information on personal protective equipment.
See Section 13 for waste treatment information.

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

Advice on safe handling : Keep container tightly closed. Use personal protective equipment. Avoid dust formation. Handle product only in closed system or provide appropriate exhaust ventilation at machinery. Avoid contact with the skin and the eyes. Do not breathe dust. Respirator must be worn if exposed to dust. Emergency eye wash fountains and emergency showers should be available in the immediate vicinity.

Hygiene measures : Keep away from food, drink and animal feedingstuffs. Take off all contaminated clothing immediately. Smoking, eating and drinking should be prohibited in the application area. Wash hands before breaks and at the end of workday. Keep working clothes separately.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Store in a place accessible by authorized persons only. Keep only in the original container.

Advice on protection against fire and explosion : Keep away from combustible material.

Further information on storage conditions : Keep tightly closed in a dry and cool place. Keep in a well-ventilated place.

Advice on common storage : Keep away from food, drink and animal feedingstuffs. Keep away from combustible material.

7.3. Specific end use(s)

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Specific use(s) : Identified use: See table in front of appendix for a complete overview of identified uses.

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

Component:	sodium dichromate	CAS-No. 10588-01-9
Derived No Effect Level (DNEL)/Derived Minimal Effect Level (DMEL)		

DMEL
Workers, Acute - local effects, Inhalation : 0.025 mg/m³
as Cr(VI)

DMEL
Workers, Long-term - local effects, Inhalation : 0.025 mg/m³
as Cr(VI)

Predicted No Effect Concentration (PNEC)		
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Fresh water : 3.4 µg/l
as Cr(VI)

Fresh water : 4.7 µg/l
as Cr(III)

Marine water : 0.47 µg/l
as Cr(III)

Sewage treatment plant (STP) : 10 mg/l
as Cr(III)

Sewage treatment plant (STP) : 0.21 mg/l
as Cr(VI)

Fresh water sediment : 31 mg/kg wwt
as Cr(III)

Fresh water sediment : 1.5 mg/kg wwt
as Cr(VI)

Marine sediment : 3.1 mg/kg wwt
as Cr(III)

Soil : 3.3 mg/kg wwt
as Cr(III)

SODIUM DICHROMATE ANHYDROUS**Other Occupational Exposure Limit Values**

EU. OELs, Directive 2004/37/EC on carcinogen and mutagens from Annex III, Part A, as amended, Time Weighted Average (TWA):, Fumes, as Cr
0.025 mg/m³

UK. EH40 Workplace Exposure Limits (WELs), as amended, Time Weighted Average (TWA):, as Cr
0.025 mg/m³

UK. EH40 Workplace Exposure Limits (WELs), as amended, Time Weighted Average (TWA):, as Cr
0.01 mg/m³

EU. OELs, Directive 2004/37/EC on carcinogen and mutagens from Annex III, Part A, as amended, Time Weighted Average (TWA):, as Cr
0.005 mg/m³
This limit does not apply until: 17 January 2025

EU. OELs, Directive 2004/37/EC on carcinogen and mutagens from Annex III, Part A, as amended, Time Weighted Average (TWA):, as Cr
0.010 mg/m³

EU. OELs, Directive 2004/37/EC on carcinogen and mutagens from Annex III, Part A, as amended, Time Weighted Average (TWA):, Fumes, as Cr
0.025 mg/m³

ELV (IE), Time Weighted Average (TWA):, as Cr
0.005 mg/m³
Binding OELV

ELV (IE), Time Weighted Average (TWA):, as Cr
0.01 mg/m³
Binding OELV

ELV (IE), Time Weighted Average (TWA):, as Cr
0.025 mg/m³
Binding OELV

Biological Exposure Indices

UK. EH40 Biological Monitoring Guidance Values (BMGVs), as amended, Chromium, Creatinine in urine
10 µmol/mol; Sampling time: End of shift.

8.2. Exposure controls

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Refer to protective measures listed in sections 7 and 8.

Personal protective equipment*Respiratory protection*

Advice : In case of brief exposure or low pollution use breathing filter apparatus.
Recommended Filter type:
Particle filter:P2
Particle filter:P3
In case of intensive or longer exposure use self-contained breathing apparatus.

Hand protection

Advice : Protective gloves complying with EN 374.
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.
Protective gloves should be replaced at first signs of wear.

Material : natural rubber
Break through time : ≥ 8 h
Glove thickness : 0.5 mm

Advice : The following information applies to aqueous, saturated solutions.

Material : polychloroprene
Break through time : ≥ 8 h
Glove thickness : 0.5 mm

Material : Nitrile rubber
Break through time : ≥ 8 h
Glove thickness : 0.35 mm

Material : butyl-rubber
Break through time : ≥ 8 h
Glove thickness : 0.5 mm

Material : Fluorinated rubber
Break through time : ≥ 8 h
Glove thickness : 0.4 mm

Material : Polyvinylchloride
Break through time : ≥ 8 h

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Glove thickness : 0.5 mm

Eye protection

Advice : Tightly fitting safety goggles

Skin and body protection

Advice : Acid resistant protective clothing.

Environmental exposure controls

General advice : Should not be released into the environment.
If material reaches soil inform authorities responsible for such cases.
If the product contaminates rivers and lakes or drains inform respective authorities.

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

Form	:	crystalline
Colour	:	light red to light orange
Odour	:	odourless
Odour Threshold	:	Not applicable
pH	:	no data available
Melting point/range	:	ca. 357 °C
Boiling point/boiling range	:	Decomposes before boiling
Flash point	:	Not applicable
Evaporation rate	:	no data available
Flammability (solid, gas)	:	does not ignite
Upper explosion limit	:	Not applicable
Lower explosion limit	:	Not applicable
Vapour pressure	:	Not applicable
Relative vapour density	:	no data available
Relative density	:	ca. 2.5

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Water solubility	:	ca. 2355 g/l soluble
Partition coefficient: n-octanol/water	:	This product is inorganic substance.
Auto-ignition temperature	:	no data available
Thermal decomposition	:	> 400 °C
Viscosity, dynamic	:	Not applicable
Explosivity	:	Product is not explosive.
Oxidizing properties	:	May intensify fire; oxidizer.

9.2. Other information

Molecular weight	:	261.97 g/mol
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SECTION 10: Stability and reactivity**10.1. Reactivity**

Advice	:	Stable under recommended storage conditions.
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10.2. Chemical stability

Advice	:	No decomposition if stored and applied as directed.
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10.3. Possibility of hazardous reactions

Hazardous reactions	:	Contact with combustible material may cause fire. Reacts with the following substances: Reducing agents
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10.4. Conditions to avoid

Conditions to avoid	:	Avoid moisture. Product is hygroscopic.
Thermal decomposition	:	> 400 °C

10.5. Incompatible materials

Materials to avoid	:	Keep away from combustible material. Materials to avoid: Reducing agents, Acids
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10.6. Hazardous decomposition products

Hazardous decomposition products	:	Under fire conditions: Chromium oxides
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SECTION 11: Toxicological information**11.1. Information on toxicological effects**

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Component:	sodium dichromate	CAS-No. 10588-01-9
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Acute toxicity**Oral**

LD50 : 59 mg/kg (Rat, male and female) (OECD Test Guideline 401)

Inhalation

LC50 : 0.200 mg/l (Rat; 4 h; dust/mist)
 LC100 : <= 2.1 mg/l (Rat, male and female; 4 h; dust/mist) (No guideline followed)

Dermal

LD50 : 2000 mg/kg)

Irritation**Skin**

Result : Corrosive (Rabbit) (OECD Test Guideline 404)

Eyes

Result : corrosive effects

Sensitisation

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

CMR effects**CMR Properties**

Carcinogenicity : May cause cancer.
 Mutagenicity : In vitro tests showed mutagenic effects
 In vivo tests showed mutagenic effects
 Teratogenicity : May damage the unborn child.
 Reproductive toxicity : May damage fertility.

Teratogenicity

LOAEL : 20 mg/kg bw/day
 Maternal

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(Oral)

Reproductive toxicity

NOAEL : 40 mg/kg bw/day
 Parent
 (Oral)

Specific Target Organ Toxicity**Single exposure**

Inhalation : Target Organs: Respiratory system May cause respiratory irritation.

Repeated exposure

Remarks : Causes damage to organs through prolonged or repeated exposure.

Other toxic properties**Repeated dose toxicity**

LOAEL : 1.7 mg/kg
 (Oral) , Target Organs: Cardio-vascular system, hematopoietic system
 LOAEC : 1.81 mg/m³
 (Inhalation) , Target Organs: Respiratory system

Aspiration hazard

Not applicable,

SECTION 12: Ecological information**12.1. Toxicity**

Component: sodium dichromate CAS-No. 10588-01-9

Acute toxicity**Fish**

LC50 : 13 - 100 mg/l (Fish; 96 h)

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Toxicity to daphnia and other aquatic invertebrates

EC50 : 1.5 mg/l (invertebrates; 24 h) Information given is based on data obtained from similar substances.

algae

NOEC : 0.1 - 0.5 mg/l (Lemna gibba (gibbous duckweed); 8 d) (End point: Growth rate)

NOEC : 0.11 mg/l (Lemna minor (common duckweed); 7 d) (End point: Growth rate)

NOEC : 0.1 mg/l (Spirodela polyrhiza; 8 d) (End point: Growth rate)

Bacteria

NOEC : 1 mg/l (Bacteria)

M-Factor

M-Factor (Chron. Aquat. Tox.) : 1

12.2. Persistence and degradability

Component:	sodium dichromate	CAS-No. 10588-01-9
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Persistence and degradability

Persistence

Result : no data available

Biodegradability

Result : The methods for determining the biological degradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

Component:	sodium dichromate	CAS-No. 10588-01-9
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Bioaccumulation

Result : Accumulation in aquatic organisms is expected.

12.4. Mobility in soil

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Component:	sodium dichromate	CAS-No. 10588-01-9
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Mobility

Water : The product is water soluble.
 Soil : Highly mobile in soils
 Air : not volatile

12.5. Results of PBT and vPvB assessment

Component:	sodium dichromate	CAS-No. 10588-01-9
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Results of PBT and vPvB assessment

Result : The PBT or vPvB criteria of Annex XIII to the REACH Regulation does not apply to inorganic substances.

12.6. Other adverse effects

Component:	sodium dichromate	CAS-No. 10588-01-9
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Additional ecological information

Result : Do not flush into surface water or sanitary sewer system.
 Avoid subsoil penetration.
 Very toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product : Disposal together with normal waste is not allowed. Special disposal required according to local regulations. Do not let product enter drains. Contact waste disposal services.

Contaminated packaging : Empty remaining contents. Packagings that cannot be cleaned are to be disposed of in the same manner as the product. Dispose of in accordance with local regulations.

European Waste Catalogue Number : No waste code according to the European Waste Catalogue can be assigned for this product, as the intended use dictates the assignment. The waste code is established in consultation with the regional waste disposer.

SECTION 14: Transport information

14.1. UN number

3288

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14.2. UN proper shipping name

ADR : TOXIC SOLID, INORGANIC, N.O.S.
 (Sodium dichromate)
RID : TOXIC SOLID, INORGANIC, N.O.S.
 (Sodium dichromate)
IMDG : TOXIC SOLID, INORGANIC, N.O.S.
 (Sodium dichromate)

14.3. Transport hazard class(es)

ADR-Class : 6.1
 (Labels; Classification Code; Hazard Identification Number; Tunnel restriction code) 6.1; T5; 60; (E)
 RID-Class : 6.1
 (Labels; Classification Code; Hazard Identification Number) 6.1; T5; 60
 IMDG-Class : 6.1
 (Labels; EmS) 6.1; F-A, S-A

14.4. Packaging group

ADR : III
 RID : III
 IMDG : III

14.5. Environmental hazards

Environmentally hazardous according to ADR : yes
 Environmentally hazardous according to RID : yes
 Marine Pollutant according to IMDG-Code : yes

14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

IMDG : Not applicable.

SECTION 15: Regulatory information

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

Component:	sodium dichromate	CAS-No. 10588-01-9
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EU. Regulation EU No. : ; The substance/mixture does not fall under this legislation.
 649/2012 concerning the
 export and import of
 dangerous chemicals

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- EU. REACH, Annex XVII, : , 234-190-3; Carcinogenicity; Category 1B
Appendix 1, Entry 28 -
Carcinogens: Category
1B (CLP Table 3 of Anx
VI). (Reg. 1907/2006/EC)
- EU. REACH, Annex XVII, : , 234-190-3; Germ cell mutagenicity; Category 1B
Appendix 4, Entry 29 -
Mutagens: Category 1B
(Table 3). (Regulation
1907/2006/EC)
- EU. REACH, Annex XVII, : , 234-190-3; Reproductive toxicity; Category 1B
Appendix 6, Entry 30 -
Toxic to reproduction:
Category 1B (Table 3).
(Regulation
1907/2006/EC)
- EU. REACH, Annex XVII, : Point Nos.: , 28; Listed
Marketing and Use
Restrictions (Regulation
1907/2006/EC)
- Point Nos.: , 30; Listed
Point Nos.: , 29; Listed
Point Nos.: , 47; Listed
Point Nos.: , 72; Listed
- EU. REACH Candidate : EC Number/Date of inclusion: 2,341,903, 28/10/2008;
List of Substances of : Carcinogen, mutagen, toxic for reproduction; Decision Number:
Very High Concern for : ED/67/2008
Authorization (SVHC)
- EU. REACH Annex XIV, : Latest application date: , 21/3/2016;
Substances Subject to
Authorization
- Sunset date: , 21/9/2017;
Intrinsic properties: , 234-190-3; Carcinogenic, Category 1B,
Mutagenic, Category 1B, Toxic for reproduction, Category 1B;
**REACH Auth. No.: REACH/20/5/0, REACH/20/5/3,
REACH/20/5/6**
- EU. Regulation No : EC Number: , 234-190-3; Listed
1451/2007 [Biocides],
Annex I, OJ (L 325)

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EU. Directive 2012/18/EU (SEVESO III) Annex I : Lower-tier requirements: 50 tonnes; Part 1: Categories of dangerous substances; H2: ACUTE TOXIC (Category 2, all exposure routes; Category 3, inhalation)
Upper-tier requirements: 200 tonnes; Part 1: Categories of dangerous substances; H2: ACUTE TOXIC (Category 2, all exposure routes; Category 3, inhalation)
Lower-tier requirements: 50 tonnes; Part 1: Categories of dangerous substances; P8: Oxidising Liquids or solids, Category 1, 2 or 3
Upper-tier requirements: 200 tonnes; Part 1: Categories of dangerous substances; P8: Oxidising Liquids or solids, Category 1, 2 or 3
Lower-tier requirements: 100 tonnes; Part 1: Categories of dangerous substances; E1: Hazardous to the Aquatic Environment in Category Acute 1 or Chronic 1
Upper-tier requirements: 200 tonnes; Part 1: Categories of dangerous substances; E1: Hazardous to the Aquatic Environment in Category Acute 1 or Chronic 1

EU. Directive 90/394/EEC : Hazard Designation: ; Carcinogen/Mutagen

UK. Releases to air and water (UK ISR) : Annual reporting level threshold: 10 kg

UK. Releases to air and water (UK ISR) : Annual reporting level threshold: 20.0 kg

UK. Releases to air and water (UK ISR) : Annual reporting level threshold: 20.0 kg

**Notification status
sodium dichromate:**

Regulatory List	Notification	Notification number
AICS	YES	
DSL	YES	
INV (CN)	YES	
ENCS (JP)	YES	(1)-283
ISHL (JP)	YES	(1)-283
NZ CLSC	YES	
EINECS	YES	234-190-3
KECI (KR)	YES	KE-31410
NZIOC	YES	

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TSCA	YES
IECSC	YES

15.2. Chemical safety assessment

A Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

H272	May intensify fire; oxidizer.
H301	Toxic if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H330	Fatal if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H340	May cause genetic defects.
H350	May cause cancer.
H360FD	May damage fertility. May damage the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Abbreviations and Acronyms

BCF	bioconcentration factor
BOD	biochemical oxygen demand
CAS	Chemical Abstracts Service
CLP	Classification, Labelling and Packaging
CMR	carcinogenic, mutagenic or toxic to reproduction
COD	chemical oxygen demand
DNEL	derived no-effect level
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
LC50	median lethal concentration
LOAEC	lowest observed adverse effect concentration
LOAEL	lowest observed adverse effect level
LOEL	lowest observed effect level
NLP	no-longer polymer
NOAEC	no observed adverse effect concentration
NOAEL	no observed adverse effect level

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NOEC	no observed effect concentration
NOEL	no observed effect level
OECD	Organisation for Economic Cooperation and Development
OEL	occupational exposure limit
PBT	persistent, bioaccumulative and toxic
REACH Auth. No.:	REACH Authorisation Number
REACH AuthAppC. No.	REACH Authorisation Application Consultation Number
PNEC	predicted no-effect concentration
STOT	specific target organ toxicity
SVHC	substance of very high concern
UVCB	substance of unknown or variable composition, complex reaction products or biological materials
vPvB	very persistent and very bioaccumulative

Further information

Key literature references and sources for data : Supplier information and data from the "Database of registered substances" of the European Chemicals Agency (ECHA) were used to create this safety data sheet.

Methods used for product classification : The classification for human health, physical and chemical hazards and environmental hazards were derived from a combination of calculation methods and if available test data.

Hints for trainings : The workers have to be trained regularly on the safe handling of the products based on the information provided in the Safety Data Sheet and the local conditions of the workplace. National regulations for the training of workers in the handling of hazardous materials must be adhered to.

Other information : Restricted to professional users. Attention - Avoid exposure - obtain special instructions before use.
The information provided in this Safety Data Sheet is correct to our knowledge at the date of its revision. The information given only describes the products with regard to safety arrangements and is not to be considered as a warranty or quality specification and does not constitute a legal relationship.
The information contained in this Safety Data Sheet relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

|| Indicates updated section.

SODIUM DICHROMATE ANHYDROUS

No.	Short title	Main User Group (SU)	Sector of Use (SU)	Product Category (PC)	Process Category (PROC)	Environmental Release Category (ERC)	Article Category (AC)	Specified
1	Formulation & (re)packing of substances and mixtures	3	NA	14	1, 2, 3, 4, 5, 8a, 8b, 9, 15	2	NA	ES13762
2	Use in metal surface treatment.	3	0	14	1, 2, 4, 5, 8a, 8b, 10, 13, 15, 21, 24	6b	NA	ES13764
3	Use in surface treatment products	3	0	14	1, 2, 4, 5, 8a, 8b, 13, 15	6b	NA	ES13766

SODIUM DICHROMATE ANHYDROUS

1. Short title of Exposure Scenario 1: Formulation & (re)packing of substances and mixtures

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Chemical product category	PC14: Metal surface treatment products, including galvanic and electroplating products
Process categories	<p>PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact)</p> <p>PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities</p> <p>PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)</p> <p>PROC15: Use as laboratory reagent</p>
Environmental Release Categories	ERC2: Formulation of preparations

2.1 Contributing scenario controlling environmental exposure for: ERC2

Amount used	Daily amount per site	<= 2 tonnes
	Annual amount per site	<= 200 tonnes
	Largest formulator	
	Regional use tonnage:	50 %
Frequency and duration of use	Continuous exposure	Continuous process
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Soil	0
	Negligible wastewater emissions as process operates without water contact, .	
	Emission or Release Factor: Air	2.5 %
	initial release prior to RMM, The used parameters represent a worst case scenario.	
	Emission or Release Factor: Air	0.025 %
	Final release factor, .	
	Emission or Release Factor: Air	0.5 kg/day
	local release rate, .	
Formulation activity is assumed to be a predominantly enclosed process.		
Technical conditions and measures at process level to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	Containment should be used to minimize releases to air., Filtration, Wet scrubbers, Air emission abatement: (Efficiency: 99 %) (ERC2)
	Water	Release to water is minimal due to closed systems and the reprocessing of process water and rinse water (ERC2)
	Soil	Not applicable, but avoid direct loss to soil (ERC2)

SODIUM DICHROMATE ANHYDROUS

Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	none
	Wastewater emission controls are not applicable as there is no direct release to wastewater., Any emission to wastewater is contained and then reduced prior to disposal	
Conditions and measures related to external treatment of waste for disposal	Disposal methods	Collect all unused material for disposal as hazardous waste in compliance with local and national regulations
Conditions and measures related to external recovery of waste	Recovery Methods	External disposal of waste remains the responsibility of the waste treatment operator
2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9		
Product characteristics	Physical Form (at time of use)	Solid, low dustiness, or in solution
Amount used		< 40 % (Aqueous solution PROC1, PROC8a, PROC8b)
		< 20 % (Aqueous solution PROC2, PROC3, PROC4, PROC5, PROC9)
		< 40 % (Solid form PROC8b)
		< 20 % (Equipment cleaning and maintenance PROC8a, PROC8b)
Frequency and duration of use	Covers daily exposures up to 8 hours	
	Frequency of use	365 days/year
Other operational conditions affecting workers exposure	Indoor(PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9)	
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of controlled ventilation (1 to 3 air changes per hour) (Efficiency: 99 %)	
	Material transfers	Handle substance within a closed system. or Provide local exhaust ventilation (LEV).
	Route of Exposure	Inhalation exposure (PROC8a, PROC8b)
	Exhaust ventilation equipped with filters.(PROC8a, PROC8b)	
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures.	
	Regular inspection and maintenance of equipment and machines.	
Conditions and measures related to personal protection, hygiene and health evaluation	Wear appropriate personal protective equipment Wear protective gloves/ protective clothing/ eye protection/ face protection. Wash off any skin contamination immediately. Avoid contact with the substance or contaminated objects	
	Route of Exposure	Inhalation exposure (PROC8a, PROC8b)
	Respirator with a half face mask Particle filter:P3(PROC8a, PROC8b)	

3. Exposure estimation and reference to its source

Environment

EUSES 2.1.2

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
---	---	Air	PEC	0.03808µg/m ³	---

Calculated worst-case.

Workers

SODIUM DICHROMATE ANHYDROUS

PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9: Advanced REACH Tool v1.5

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1	Inhalable	Worker - inhalative, long-term - local	0µg/m ³	---
PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9	Inhalable	Worker - inhalative, long-term - local	0.26µg/m ³	---

Calculated worst-case. The exposure estimate represents the 90th percentile of the exposure distribution.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

If conditions differ from those listed in Section 2, downstream user (DU) should check whether they are still within the boundaries of the ES (i.e., RCR < 1)

Additional good practice advice beyond the REACH Chemical Safety Assessment

Health

Assumes a good basic standard of occupational hygiene is implemented.

Avoid contact with contaminated tools and objects

Change gloves, if duration of activity exceeds breakthrough time

Ensure material transfers are under containment or extract ventilation.

SODIUM DICHROMATE ANHYDROUS

1. Short title of Exposure Scenario 2: Use in metal surface treatment.

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	SU0: Other
Chemical product category	PC14: Metal surface treatment products, including galvanic and electroplating products
Process categories	<p>PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact)</p> <p>PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities</p> <p>PROC10: Roller application or brushing</p> <p>PROC13: Treatment of articles by dipping and pouring</p> <p>PROC15: Use as laboratory reagent</p> <p>PROC21: Low energy manipulation of substances bound in materials and/ or articles</p> <p>PROC24: High (mechanical) energy work-up of substances bound in materials and/ or articles</p>
Environmental Release Categories	ERC6b: Industrial use of reactive processing aids

2.1 Contributing scenario controlling environmental exposure for: ERC6b

Amount used	Regional use tonnage:	35 tonnes
	Fraction of regional tonnage used locally:	20 %
Frequency and duration of use	Continuous exposure	Continuous process
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Air	0.001 % (ERC6b)
	Final release factor, . (ERC6b)	
Technical conditions and measures at process level to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	Containment should be used to minimize releases to air., Filtration, Wet scrubbers, Air emission abatement: (Efficiency: 99 %) (ERC6b)
	Water	Release to water is minimal due to closed systems and the reprocessing of process water and rinse water (ERC6b)
	Soil	Not applicable, but avoid direct loss to soil (ERC6b)
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	none
	Wastewater emission controls are not applicable as there is no direct release to wastewater., Any emission to wastewater is contained and then reduced prior to disposal	
Conditions and measures related to external treatment of waste for disposal	Disposal methods	Collect all unused material for disposal as hazardous waste in compliance with local and national regulations
Conditions and measures related to external recovery of waste	Recovery Methods	External disposal of waste remains the responsibility of the waste treatment operator

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC4, PROC5,

SODIUM DICHROMATE ANHYDROUS

PROC8a, PROC8b, PROC10, PROC13, PROC15, PROC21, PROC24

Product characteristics	Physical Form (at time of use)	Solid, low dustiness, or in solution
Amount used		< 40 % (Aqueous solution, Solid form PROC1)
		< 20 % (Aqueous solution PROC5, PROC8b)
		< 40 % (Solid form PROC5, PROC8b)
		0.5 - 1 % (Aqueous solution PROC10)
		0.1 - 0.5 % (Aqueous solution PROC10)
		1 - 5 % (Aqueous solution PROC10)
		< 20 % (Aqueous solution PROC8b)
		< 40 % (Solid form PROC8b)
		Few traces(Aqueous solution PROC8b)
		< 20 % (Aqueous solution PROC4, PROC13, PROC8a)
	< 20 % (Aqueous solution, Sampling PROC15)	
	< 0.1 % (Solid form PROC21, PROC24)	
	< 3 % (Solid form PROC21, PROC24)	
Frequency and duration of use	Covers daily exposures up to 8 hours	
	Frequency of use	365 days/year
Human factors not influenced by risk management	Assumes a good basic standard of occupational hygiene is implemented.	
Other operational conditions affecting workers exposure	Indoor(PROC1, PROC2, PROC4, PROC5, PROC8a, PROC8b, PROC10, PROC13, PROC15, PROC21, PROC24)	
Technical conditions and measures to control dispersion from source towards the worker	Provide local exhaust ventilation (LEV). Provide a good standard of controlled ventilation (1 to 3 air changes per hour) (Efficiency: 99 %)	
	Material transfers	Handle substance within a closed system. or Provide local exhaust ventilation (LEV).
	Route of Exposure	Inhalation exposure (PROC8a, PROC8b)
	Exhaust ventilation equipped with filters.(PROC8a, PROC8b) Use a receptor hood for fumes/vapours.(PROC15)	
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures. Regular inspection and maintenance of equipment and machines. Ensure segregation of worker from the source.	
Conditions and measures related to personal protection, hygiene and health evaluation	Wear appropriate personal protective equipment Wear protective gloves/ protective clothing/ eye protection/ face protection. Wash off any skin contamination immediately. Avoid contact with the substance or contaminated objects Wear respiratory protection.	
	Route of Exposure	Inhalation exposure (PROC8a, PROC8b)
	Respirator with a half face mask Particle filter:P3(PROC8a, PROC8b)	

3. Exposure estimation and reference to its source

Environment

EUSES 2.1.2

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
---	---	Air	PEC	0.00186µg/m ³	---

The exposure estimate represents the 90th percentile of the exposure distribution.

SODIUM DICHROMATE ANHYDROUS

Workers

PROC1, PROC4, PROC5, PROC8a, PROC8b, PROC10, PROC13, PROC15, PROC21, PROC24: Advanced REACH Tool v1.5

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1	---	Worker - inhalative, long-term - local	0µg/m ³	---
PROC5	---	Worker - inhalative, long-term - local	0.11µg/m ³	---
PROC8b	---	Worker - inhalative, long-term - local	0.42µg/m ³	---
PROC5	---	Worker - inhalative, long-term - local	0.17µg/m ³	---
PROC8b	---	Worker - inhalative, long-term - local	0.5µg/m ³	---
PROC4, PROC8a, PROC13	---	Worker - inhalative, long-term - local	1.26µg/m ³	---
PROC8b	---	Worker - inhalative, short-term - local	0.76µg/m ³	---
PROC8b	---	Worker - inhalative, short-term - local	0.066µg/m ³	---
PROC8b	---	Worker - inhalative, short-term - local	0.0023µg/m ³	---
PROC8b	---	Worker - inhalative, short-term - local	0.22µg/m ³	---
PROC10	---	Worker - inhalative, long-term - local	0.23µg/m ³	---
PROC10	---	Worker - inhalative, long-term - local	0.017µg/m ³	---
PROC10	---	Worker - inhalative, long-term - local	0.4µg/m ³	---
PROC15	---	Worker - inhalative, long-term - local	0.65µg/m ³	---
PROC21, PROC24	---	Worker - inhalative, long-term - local	0.11µg/m ³	---
PROC21, PROC24	---	Worker - inhalative, short-term - local	1.13µg/m ³	---
PROC21, PROC24	---	Worker - inhalative, short-term - local	0.2µg/m ³	---
PROC21, PROC24	---	Worker - inhalative, short-term - local	2.03µg/m ³	---
PROC21, PROC24	---	Worker - inhalative, short-term - local	0.16µg/m ³	---
PROC21, PROC24	---	Worker - inhalative, short-term - local	1.9µg/m ³	---

The exposure estimate represents the 90th percentile of the exposure distribution.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other risk management measures/operational conditions are adopted, then users should ensure that risks

SODIUM DICHROMATE ANHYDROUS

are managed to at least equivalent levels.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

If conditions differ from those listed in Section 2, downstream user (DU) should check whether they are still within the boundaries of the ES (i.e., RCR < 1)

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

SODIUM DICHROMATE ANHYDROUS

1. Short title of Exposure Scenario 3: Use in surface treatment products

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	SU0: SU0
Chemical product category	PC14: Metal surface treatment products, including galvanic and electroplating products
Process categories	<p>PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact)</p> <p>PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities</p> <p>PROC13: Treatment of articles by dipping and pouring</p> <p>PROC15: Use as laboratory reagent</p>
Environmental Release Categories	ERC6b: Industrial use of reactive processing aids

2.1 Contributing scenario controlling environmental exposure for: ERC6b

Amount used	Regional use tonnage:	35 tonnes
	Fraction of regional tonnage used locally:	20 %
Frequency and duration of use	Continuous exposure	Continuous process
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Air	0.001
	Emission or Release Factor: Soil	0
Technical conditions and measures at process level to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	Containment should be used to minimize releases to air., Filtration, Wet scrubbers, Air emission abatement: (Efficiency: 99 %) (ERC6b)
	Water	Release to water is minimal due to closed systems and the reprocessing of process water and rinse water (ERC6b)
	Soil	Not applicable, but avoid direct loss to soil (ERC6b)
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	none
	Wastewater emission controls are not applicable as there is no direct release to wastewater., Any emission to wastewater is contained and then reduced prior to disposal	
Conditions and measures related to external treatment of waste for disposal	Disposal methods	Collect all unused material for disposal as hazardous waste in compliance with local and national regulations
Conditions and measures related to external recovery of waste	Recovery Methods	External disposal of waste remains the responsibility of the waste treatment operator

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC4, PROC5, PROC8a, PROC8b, PROC13, PROC15

Product characteristics	Physical Form (at time of use)	Solid, low dustiness, or in solution
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SODIUM DICHROMATE ANHYDROUS

Amount used		< 40 % (Aqueous solution, Solid form PROC1)
		< 20 % (Aqueous solution PROC4, PROC8a, PROC13)
		< 20 % (Aqueous solution PROC5, PROC8b)
		< 40 % (Solid form PROC5, PROC8b)
		< 20 % (Aqueous solution PROC8b)
		< 40 % (Solid form PROC8b)
	Few traces(Aqueous solution PROC8b)	
Frequency and duration of use	Covers daily exposures up to 8 hours	
	Frequency of use	365 days/year
Human factors not influenced by risk management	Assumes a good basic standard of occupational hygiene is implemented.	
Other operational conditions affecting workers exposure	Indoor(PROC1, PROC2, PROC4, PROC5, PROC8a, PROC8b, PROC13, PROC15)	
Technical conditions and measures to control dispersion from source towards the worker	Provide local exhaust ventilation (LEV). Provide a good standard of controlled ventilation (1 to 3 air changes per hour) (Efficiency: 99 %)	
	Material transfers	Handle substance within a closed system. or Provide local exhaust ventilation (LEV).
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures. Regular inspection and maintenance of equipment and machines. Ensure segregation of worker from the source.	
Conditions and measures related to personal protection, hygiene and health evaluation	Wear appropriate personal protective equipment Wear protective gloves/ protective clothing/ eye protection/ face protection. Wash off any skin contamination immediately. Avoid contact with the substance or contaminated objects Wear respiratory protection.	

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
---	---	Air	---	0.00186µg/m ³	---

Workers

PROC1, PROC4, PROC5, PROC8a, PROC8b, PROC13, PROC15: Advanced REACH Tool v1.5

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1	---	Worker - inhalative, long-term - local	0µg/m ³	---
PROC5	---	Worker - inhalative, long-term - local	0.11µg/m ³	---
PROC8b	---	Worker - inhalative, long-term - local	0.42µg/m ³	---
PROC5	---	Worker - inhalative, short-term - local	0.5µg/m ³	---
PROC8b	---	Worker - inhalative, short-term - local	0.17µg/m ³	---
PROC4,	---	Worker - inhalative, long-	1.26µg/m ³	---

SODIUM DICHROMATE ANHYDROUS

PROC8a, PROC13		term - local		
PROC8b	---	Worker - inhalative, short-term - local	0.76µg/m ³	---
PROC8b	---	Worker - inhalative, short-term - local	0.066µg/m ³	---
PROC8b	---	Worker - inhalative, short-term - local	0.22µg/m ³	---
PROC8b	---	Worker - inhalative, short-term - local	0.0023µg/m ³	---
PROC15	---	Worker - inhalative, long- term - local	0.65µg/m ³	---

The exposure estimate represents the 90th percentile of the exposure distribution.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

If conditions differ from those listed in Section 2, downstream user (DU) should check whether they are still within the boundaries of the ES (i.e., RCR < 1)

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.