The life science business of Merck operates as MilliporeSigma in the US and Canada.
Section 2

2.3 Other hazards
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Section 3: Composition/information on ingredients

3.1 Substances
Synonyms:
Kendall’s compound F
11β,17α,21-Trihydroxypregn-4-ene-3,20-dione
Reichstein’s substance M
17-Hydroxycorticosterone
**4-Pregnene-11β,17α,21-triol-3,20-dione**
*Cortisol*

**Formula**: C_{21}H_{30}O_{5}

**Molecular weight**: 362.46 g/mol

**CAS-No.**: 50-23-7

**EC-No.**: 200-020-1

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dihydrocortisone</td>
<td>Repr. 1A; STOT RE 2; H360Df, H373</td>
<td>&lt;= 100 %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>EC-No.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>50-23-7</td>
<td>200-020-1</td>
<td></td>
</tr>
</tbody>
</table>

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**
Show this material safety data sheet to the doctor in attendance.

**If inhaled**
After inhalation: fresh air. Call in physician.

**In case of skin contact**
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

**In case of eye contact**
After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

**If swallowed**
After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

#### 4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

#### 4.3 Indication of any immediate medical attention and special treatment needed
No data available

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Foam Carbon dioxide (CO2) Dry powder

**Unsuitable extinguishing media**
For this substance/mixture no limitations of extinguishing agents are given.
5.2 **Special hazards arising from the substance or mixture**
Carbon oxides
Combustible.
Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 **Advice for firefighters**
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 **Further information**
Prevent fire extinguishing water from contaminating surface water or the ground water system.

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**SECTION 6: Accidental release measures**

6.1 **Personal precautions, protective equipment and emergency procedures**
Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

6.2 **Environmental precautions**
Do not let product enter drains.

6.3 **Methods and materials for containment and cleaning up**
Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 **Reference to other sections**
For disposal see section 13.

---

**SECTION 7: Handling and storage**

7.1 **Precautions for safe handling**
**Advice on safe handling**
Work under hood. Do not inhale substance/mixture.

**Hygiene measures**
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2.

7.2 **Conditions for safe storage, including any incompatibilities**
**Storage conditions**
Protect against light. Tightly closed. Dry. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

**Storage class**
Storage class (TRGS 510): 6.1C: Combustible, acute toxic Cat.3 / toxic compounds or compounds which causing chronic effects

7.3 **Specific end use(s)**
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated
SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with workplace control parameters

8.2 Exposure controls

Personal protective equipment

Eye/face protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

Skin protection
This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).
Full contact
Material: Nitrile rubber
Minimum layer thickness: 0,11 mm
Break through time: 480 min
Material tested: KCL 741 Dermatril® L

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).
Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0,11 mm
Break through time: 480 min
Material tested: KCL 741 Dermatril® L

Body Protection
protective clothing

Respiratory protection
required when dusts are generated.
Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.
Recommended Filter type: Filter type P3

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Control of environmental exposure
Do not let product enter drains.
SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance Form: solid
b) Odor odorless
c) Odor Threshold Not applicable
d) pH No data available
e) Melting point/freezing point Melting point/range: 211 - 214 °C - lit.
f) Initial boiling point No data available
f) and boiling range

g) Flash point Not applicable
h) Evaporation rate No data available
i) Flammability (solid, gas) No data available
j) Upper/lower flammability or explosive limits No data available
k) Vapor pressure No data available
l) Vapor density No data available
m) Density No data available
   Relative density No data available
n) Water solubility 0,28 g/l at 25 °C - slightly soluble
o) Partition coefficient: n-octanol/water log Pow: 1,61 - (Lit.), Bioaccumulation is not expected.
p) Autoignition temperature No data available
q) Decomposition temperature No data available
r) Viscosity Viscosity, kinematic: No data available
   Viscosity, dynamic: No data available
s) Explosive properties No data available
t) Oxidizing properties none

9.2 Other safety information
No data available

SECTION 10: Stability and reactivity

10.1 Reactivity
The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

10.2 Chemical stability
The product is chemically stable under standard ambient conditions (room temperature).
10.3 **Possibility of hazardous reactions**
Violent reactions possible with:
- Strong oxidizing agents
- Acids
- Alkali metals

10.4 **Conditions to avoid**
- Light.
- no information available

10.5 **Incompatible materials**
- Strong oxidizing agents

10.6 **Hazardous decomposition products**
- In the event of fire: see section 5

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**SECTION 11: Toxicological information**

11.1 **Information on toxicological effects**

**Acute toxicity**
- LD50 Oral - Rat - 5.000 mg/kg
  - Remarks: (RTECS)
- Inhalation: No data available
- LD50 Dermal - Mouse - 23 mg/kg
  - Remarks: (RTECS)

**Skin corrosion/irritation**
- No data available

**Serious eye damage/eye irritation**
- No data available

**Respiratory or skin sensitization**
- No data available

**Germ cell mutagenicity**
- In vivo tests did not show mutagenic effects
- Test Type: In vitro mammalian cell gene mutation test
- Test system: Chinese hamster lung cells
- Metabolic activation: with and without metabolic activation
- Method: OECD Test Guideline 476
  - Result: negative
- Test Type: unscheduled DNA synthesis assay
  - Test system: rat hepatocytes
  - Method: OECD Test Guideline 482
  - Result: negative
- Test Type: Mutagenicity (mammal cell test): chromosome aberration.
  - Test system: Human lymphocytes
  - Metabolic activation: with and without metabolic activation
  - Method: OECD Test Guideline 473
  - Result: positive
- Test Type: Ames test
  - Test system: Salmonella typhimurium
  - Metabolic activation: with and without metabolic activation
  - Method: OECD Test Guideline 471
Result: positive

Test Type: In vivo micronucleus test  
Species: Mouse  
Cell type: Bone marrow  
Application Route: Intraperitoneal injection  
Method: OECD Test Guideline 474  
Result: negative

**Carcinogenicity**  
No data available

**Reproductive toxicity**  
May damage the unborn child. Positive evidence from human epidemiological studies.  
Suspected of damaging fertility.

**Specific target organ toxicity - single exposure**  
No data available

**Specific target organ toxicity - repeated exposure**  
May cause damage to organs through prolonged or repeated exposure.  
**Aspiration hazard**  
No data available

### 11.2 Additional Information

**RTECS:** GM8925000  
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.  
Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

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**SECTION 12: Ecological information**

### 12.1 Toxicity

Toxicity to daphnia and other aquatic invertebrates  
**static test EC50 - Daphnia magna (Water flea) - > 100 mg/l - 48 h**  
(OECD Test Guideline 202)

### 12.2 Persistence and degradability

Biodegradability  
aerobic - Exposure time 22 d  
**Result: >= 96 % - Readily biodegradable.**  
(OECD Test Guideline 301E)

### 12.3 Bioaccumulative potential

No data available

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
12.6 Other adverse effects
Discharge into the environment must be avoided.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product
See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14: Transport information

14.1 UN number
ADR/RID: -  
IMDG: -  
IATA: -

14.2 UN proper shipping name
ADR/RID: Not dangerous goods  
IMDG: Not dangerous goods  
IATA: Not dangerous goods

14.3 Transport hazard class(es)
ADR/RID: -  
IMDG: -  
IATA: -

14.4 Packaging group
ADR/RID: -  
IMDG: -  
IATA: -

14.5 Environmental hazards
ADR/RID: no  
IMDG Marine pollutant: no  
IATA: no

14.6 Special precautions for user

Further information
Not classified as dangerous in the meaning of transport regulations.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

Other regulations
Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

Take note of Dir 94/33/EC on the protection of young people at work.

15.2 Chemical Safety Assessment
For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.
H360Df  May damage the unborn child. Suspected of damaging fertility.
H373   May cause damage to organs through prolonged or repeated exposure.

**Further information**
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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