

Version
1.0

Revision Date:
28.04.2016

Date of last issue: -
Date of first issue: 28.04.2016

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : CLEVIOS F 010 1KG(P1,0C)K27
81076264

Manufacturer or supplier's details

Company : Heraeus Deutschland GmbH & Co. KG

Address : Heraeusstr. 12-14
Hanau 63450

Telephone : +496181351

Emergency telephone number : 0049 6132-84463
International Emergency Number
This telephone number is available 24 hours per day, 7 days
per week.

Recommended use of the chemical and restrictions on use

Recommended use : Industrial use
Coatings

2. HAZARDS IDENTIFICATION

Manufacture, Storage and Import of Hazardous Chemicals Rules 1989

Classification

Very highly flammable liquids

GHS Classification

Flammable liquids : Category 2

Serious eye damage/eye irritation : Category 2A

Skin sensitisation : Category 1

Specific target organ toxicity - single exposure : Category 3 (Central nervous system)

Specific target organ toxicity - repeated exposure (Oral) : Category 2 (Kidney)

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H225 Highly flammable liquid and vapour.
H317 May cause an allergic skin reaction.

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H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
H373 May cause damage to organs (Kidney) through prolonged or repeated exposure if swallowed.

Precautionary statements : **Prevention:**
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P280 Wear protective gloves/ eye protection/ face protection.
Response:
P362 + P364 Take off contaminated clothing and wash it before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Other hazards which do not result in classification

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Chemical nature : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
propan-2-ol	67-63-0	>= 50 - < 70
ethane-1,2-diol	107-21-1	>= 1 - < 5
[3-(2,3-epoxypropoxy)propyl]diethoxymethylsilane	2897-60-1	>= 0.1 - < 1

Contains:

Chemical name	CAS-No. EC-No. Registration number	Concentration (% w/w)
Poly(3,4-ethylendioxythiophen)-polystyrolsulfonat; PEDOT/PSS	155090-83-8	

4. FIRST AID MEASURES

General advice : First aider needs to protect himself.
Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.

If inhaled : Move to fresh air.

In case of skin contact : Wash off immediately with plenty of water.
Take off all contaminated clothing immediately.
Obtain medical attention.

In case of eye contact : In case of eye contact, remove contact lens and rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Keep eye wide open while rinsing.
Protect unharmed eye.

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Call a physician immediately.

- If swallowed : **Immediately give large quantities of water to drink.**
Do NOT induce vomiting.
- Most important symptoms and effects, both acute and delayed : **May cause an allergic skin reaction.**
Causes serious eye irritation.
May cause drowsiness or dizziness.
May cause damage to organs through prolonged or repeated exposure if swallowed.
- Notes to physician : Treat symptomatically.

5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Specific hazards during fire-fighting : Exposure to decomposition products may be a hazard to health.
- Hazardous combustion products : **Carbon oxides**
- Specific extinguishing methods : Use a water spray to cool fully closed containers.
Prevent fire extinguishing water from contaminating surface water or the ground water system.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment.

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Follow safe handling advice and personal protective equipment recommendations.
Ensure adequate ventilation.
Evacuate personnel to safe areas.
Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : **Do not allow contact with soil, surface or ground water.**
Do not let product enter drains.
- Methods and materials for containment and cleaning up : Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).
Sweep up or vacuum up spillage and collect in suitable container for disposal.

7. HANDLING AND STORAGE

- Advice on safe handling : Take precautionary measures against **static discharges.**
Provide sufficient air exchange and/or exhaust in work rooms.
Wear personal protective equipment.
Keep away from heat and sources of ignition.
Avoid inhalation, ingestion and contact with skin and eyes.
Smoking, eating and drinking should be prohibited in the ap-

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plication area.

Conditions for safe storage : **Keep tightly closed in a dry, cool and well-ventilated place.**

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
propan-2-ol	67-63-0	TWA	200 ppm	ACGIH
		STEL	400 ppm	ACGIH
ethane-1,2-diol	107-21-1	C (Aerosol only)	100 mg/m ³	ACGIH

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Propan-2-ol	67-63-0	Acetone	Urine	End of shift at end of work-week	40 mg/l	ACGIH BEI

Engineering measures : **Provide sufficient air exchange and/or exhaust in work rooms.**

Personal protective equipment

Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.

Filter type : **Filter type ABEK-P**

Hand protection

Remarks : **Before removing gloves clean them with soap and water.**
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. 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. As the product is a mixture of several substances, the durability of the glove materials cannot be calculated in advance and has to be tested before use.

Eye protection : **Safety glasses with side-shields**

Skin and body protection : Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures : Keep away from food and drink.
Wash hands before breaks and at the end of workday.
Keep working clothes separately.

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Remove and wash contaminated clothing and gloves, including the inside, before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Colour	: blue
Odour	: alcohol-like
Odour Threshold	: No data available
pH	: 2.2 - 3.2
Melting point/range	: No data available
Boiling point/boiling range	: 82 °C (1,013 hPa)
Flash point	: 21 °C
Evaporation rate	: No data available
Flammability (solid, gas)	: Not applicable
Upper explosion limit	: No data available
Lower explosion limit	: No data available
Vapour pressure	: <= 1,100 hPa
Relative vapour density	: No data available
Relative density	: No data available
Density	: 0.89 g/cm ³
Solubility(ies)	
Water solubility	: No data available
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	
Viscosity, dynamic	: 45 mPa.s (23 °C)
Viscosity, kinematic	: > 40 mm ² /s (23 °C) < 20.5 mm ² /s (40 °C)

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Explosive properties : Not applicable
Oxidizing properties : Not applicable

10. STABILITY AND REACTIVITY

Reactivity : No dangerous reaction known under conditions of normal use.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions : No dangerous reaction known under conditions of normal use.
Conditions to avoid : No data available
Incompatible materials : No data available
Hazardous decomposition products : No data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.

Product:

Acute oral toxicity : **Acute toxicity estimate: > 5,000 mg/kg**
Method: Calculation method

Components:

propan-2-ol:

Acute oral toxicity : LD50 (Rat): **> 5,000 mg/kg**

Acute inhalation toxicity : LC50 (Rat): **72.6 mg/l**
Exposure time: 4 h
Test atmosphere: vapour

Acute dermal toxicity : LD50 (Rat): **> 5,000 mg/kg**

ethane-1,2-diol:

Acute oral toxicity : Acute toxicity estimate: 500 mg/kg
Method: Expert judgement
Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI

Acute inhalation toxicity : LC50 (Rat): > 2.5 mg/l
Exposure time: 4 h
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Mouse): > 3,500 mg/kg

[3-(2,3-epoxypropoxy)propyl]diethoxymethylsilane:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 401

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg

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Skin corrosion/irritation

Not classified based on available information.

Components:

propan-2-ol:

Species: Rabbit

Result: No skin irritation

ethane-1,2-diol:

Species: Rabbit

Result: No skin irritation

[3-(2,3-epoxypropoxy)propyl]diethoxymethylsilane:

Species: Rabbit

Method: OECD Test Guideline 404

Result: No skin irritation

Serious eye damage/eye irritation

Causes serious eye irritation.

Components:

propan-2-ol:

Species: Rabbit

Result: Irritation to eyes, reversing within 21 days

ethane-1,2-diol:

Species: Rabbit

Result: No eye irritation

[3-(2,3-epoxypropoxy)propyl]diethoxymethylsilane:

Species: Rabbit

Method: OECD Test Guideline 405

Result: No eye irritation

Respiratory or skin sensitisation

Skin sensitisation: May cause an allergic skin reaction.

Respiratory sensitisation: Not classified based on available information.

Components:

propan-2-ol:

Test Type: Buehler Test

Exposure routes: Skin contact

Species: Guinea pig

Method: OECD Test Guideline 406

Result: negative

ethane-1,2-diol:

Test Type: Maximisation Test

Exposure routes: Skin contact

Species: Guinea pig

Result: negative

[3-(2,3-epoxypropoxy)propyl]diethoxymethylsilane:

Exposure routes: Skin contact

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Species: Guinea pig
Method: OECD Test Guideline 406
Result: positive

Assessment: Probability or evidence of skin sensitisation in humans

Germ cell mutagenicity

Not classified based on available information.

Components:

propan-2-ol:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Mouse
Application Route: Intraperitoneal injection
Result: negative

ethane-1,2-diol:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative

[3-(2,3-epoxypropoxy)propyl]diethoxymethylsilane:

Genotoxicity in vitro : Test Type: Mutagenicity (in vitro mammalian cytogenetic test)
Result: positive

: Test Type: Bacterial reverse mutation assay (AMES)
Result: positive

Genotoxicity in vivo : Test Type: In vivo micronucleus test
Species: Mouse
Result: negative

Germ cell mutagenicity - Assessment : Weight of evidence does not support classification as a germ cell mutagen.

Carcinogenicity

Not classified based on available information.

Components:

propan-2-ol:

Species: Rat
Application Route: inhalation (vapour)
Exposure time: 104 weeks
Method: OECD Test Guideline 451
Result: negative

ethane-1,2-diol:

Species: Mouse
Application Route: Ingestion
Exposure time: 2 Years
Result: negative

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Reproductive toxicity

Not classified based on available information.

Components:

propan-2-ol:

Effects on fertility : Test Type: Two-generation reproduction toxicity study
Species: Rat
Application Route: Ingestion
Result: negative

Effects on foetal development : Test Type: Embryo-foetal development
Species: Rat
Application Route: Ingestion
Result: negative

STOT - single exposure

May cause drowsiness or dizziness.

Components:

propan-2-ol:

Assessment: May cause drowsiness or dizziness.

STOT - repeated exposure

May cause damage to organs (Kidney) through prolonged or repeated exposure if swallowed.

Components:

ethane-1,2-diol:

Exposure routes: Ingestion
Target Organs: Kidney
Assessment: Shown to produce significant health effects in animals at concentrations of >10 to 100 mg/kg bw.

Repeated dose toxicity

Components:

propan-2-ol:

Species: Rat
NOAEL: 5000 ppm
Application Route: inhalation (vapour)
Exposure time: 104 Weeks
Method: OECD Test Guideline 413

ethane-1,2-diol:

Species: Rat
NOAEL: 150 mg/kg
Application Route: Ingestion
Exposure time: 2 yr

Species: Dog
NOAEL: 2,200 - 4,400 mg/kg
Application Route: Skin contact
Exposure time: 4 Weeks
Method: OECD Test Guideline 410

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Aspiration toxicity

Not classified based on available information.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

propan-2-ol:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 10,000 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 10,000 mg/l
Exposure time: 24 h

Toxicity to bacteria : EC50 (Pseudomonas putida): > 1,050 mg/l
Exposure time: 16 h

ethane-1,2-diol:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 72,860 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae : EC50 (Pseudokirchneriella subcapitata (green algae)): 6,500 - 13,000 mg/l
Exposure time: 96 h

Toxicity to fish (Chronic toxicity) : NOEC: 15,380 mg/l
Exposure time: 7 d
Species: Pimephales promelas (fathead minnow)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 8,590 mg/l
Exposure time: 7 d
Species: Ceriodaphnia dubia (water flea)

Persistence and degradability

Components:

propan-2-ol:

Biodegradability : Result: rapidly degradable

ethane-1,2-diol:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 90 - 100 %
Exposure time: 10 d
Method: OECD Test Guideline 301A

Bioaccumulative potential

Components:

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propan-2-ol:

Partition coefficient: n-octanol/water : log Pow: 0.05

ethane-1,2-diol:

Bioaccumulation : Species: Leuciscus idus (Golden orfe)
Bioconcentration factor (BCF): 10

Partition coefficient: n-octanol/water : log Pow: -1.93

Mobility in soil

No data available

Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : If recycling is not practicable, dispose of in compliance with local regulations.

Contaminated packaging : Dispose of as unused product.

14. TRANSPORT INFORMATION

International Regulation

UNRTDG

UN number : UN 1993
Proper shipping name : FLAMMABLE LIQUID, N.O.S.
(Propan-2-ol)
Class : 3
Packing group : II
Labels : 3

IATA-DGR

UN/ID No. : UN 1993
Proper shipping name : Flammable liquid, n.o.s.
(Propan-2-ol)
Class : 3
Packing group : II
Labels : Flammable Liquids
Packing instruction (cargo aircraft) : 364
Packing instruction (passenger aircraft) : 353

IMDG-Code

UN number : UN 1993
Proper shipping name : FLAMMABLE LIQUID, N.O.S.
(Propan-2-ol)
Class : 3
Packing group : II

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Labels	:	3
EmS Code	:	F-E, <u>S-E</u>
Marine pollutant	:	no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC CodeNot applicable for product as supplied.

15. REGULATORY INFORMATION**Safety, health and environmental regulations/legislation specific for the substance or mixture**

16. OTHER INFORMATION**Full text of other abbreviations**

AICS - Australian Inventory of Chemical Substances; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; CPR - Controlled Products Regulations; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

Date format : dd.mm.yyyy

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**SAFETY DATA SHEET
CLEVIOS F 010**

1KG(P1,0C)K27

Heraeus

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