SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Geogard 221

Version	1.0 / EN
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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name : Geogard 221

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

Use of the Substance/Mixture : Conservation agent (preservative) for cosmetics

1.3 Details of the supplier of the safety data sheet

Company : **Lonza Ltd**
Muenchensteinerstrasse 38
CH-4002 Basel
Switzerland
Business Telephone: +41 61 316 81 11

Lonza Cologne GmbH
Nattermannallee 1
DE-50829 Köln, Germany
Business Telephone: + 49 221 99 1990

E-mail address Responsible/issuing person : sds@lonza.com

1.4 Emergency telephone number

Emergency telephone number : Lonza Ltd, CH-4002 Basel, Switzerland
Telephone: +41 61 313 94 94 (24h)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Acute toxicity, Category 4	H302: Harmful if swallowed.
Acute toxicity, Category 4	H332: Harmful if inhaled.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word : Warning

Hazard statements : H302 Harmful if swallowed.
H332 Harmful if inhaled.

Precautionary statements :

Prevention:

P261 Avoid breathing mist/vapours/spray.

Response:

P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

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.

No hazards to be specially mentioned.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Benzyl alcohol	100-51-6 202-859-9 603-057-00-5 01-2119492630-38-XXXX	Acute Tox. 4; H302 Acute Tox. 4; H332	>= 70 - < 90
3-Acetyl-6-methyl-2H-pyran-2,4(3H)-dione	520-45-6; 771-03-9 208-293-9 607-163-00-2 01-2120747930-51-XXXX	Acute Tox. 4; H302	>= 5 - < 10
Substances with a workplace exposure limit			

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

If inhaled : Move to fresh air.
Consult a physician after significant exposure.
If unconscious, place in recovery position and seek medical advice.
If breathing is irregular or stopped, administer artificial respiration.
Keep respiratory tract clear.

In case of skin contact : After contact with skin, wash immediately with plenty of soap and water.
If on clothes, remove clothes.
In the case of skin irritation or allergic reactions see a physician.

In case of eye contact : Immediately flush eye(s) with plenty of water.
Remove contact lenses.

Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Clean mouth with water and drink afterwards plenty of water.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : No information available.

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 : Water spray
Alcohol-resistant foam
Dry chemical

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : Heating or fire can release toxic gas.

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment.

Further information : Use water spray to cool unopened containers.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.
Ensure adequate ventilation.
Use respirator when performing operations involving potential exposure to vapour of the product.

6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

6.4 Reference to other sections

For personal protection see section 8.

For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling	:	Avoid formation of aerosol. Do not breathe vapours/dust. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. Dispose of rinse water in accordance with local and national regulations.
Advice on protection against fire and explosion	:	Take precautionary measures against static discharges.
Hygiene measures	:	Avoid contact with skin, eyes and clothing. When using do not eat or drink. When using do not smoke.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	Keep container tightly closed. Keep in a well-ventilated place. Electrical installations / working materials must comply with the technological safety standards. To maintain product quality, do not store in heat or direct sunlight.
Other data	:	No decomposition if stored and applied as directed.

7.3 Specific end use(s)

Specific use(s)	:	No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
Benzyl alcohol	Consumers	Oral	Short-term exposure, Acute systemic effects	20 mg/kg
	Consumers	Oral	Long-term systemic effects	4 mg/kg
	Consumers	Inhalation	Short-term exposure, Systemic effects	27 mg/m3
	Consumers	Inhalation	Long-term systemic effects	5,4 mg/m3
	Workers	Inhalation	Short-term exposure, Systemic effects	110 mg/m3

	Workers	Inhalation	Long-term systemic effects	22 mg/m3
	Workers	Dermal	Short-term exposure, Systemic effects	40 mg/kg
	Workers	Dermal	Long-term systemic effects	8 mg/kg

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
Benzyl alcohol	Soil	0,456 mg/kg
	Sewage treatment plant	39 mg/l
	Marine sediment	0,527 mg/kg
	Marine water	0,1 mg/l
	Fresh water sediment	5,27 mg/kg
	Fresh water	1 mg/l

8.2 Exposure controls

Personal protective equipment

Eye protection : Safety glasses with side-shields conforming to EN166

Hand protection

Material : Nitrile rubber

Remarks : Wear protective gloves. Break through time : > 480 min
The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

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

Respiratory protection : In the case of vapour formation use a respirator with an approved filter.
Respirator with ABEK filter.

Respirator with a vapour filter (EN 141)

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : liquid

Colour : yellow

Odour : None known.

Odour Threshold : no data available

pH : no data available

Melting point/range : no data available

Boiling point/boiling range : no data available

Flash point	:	> 96 °C
Evaporation rate	:	no data available
Flammability (solid, gas)	:	no data available
Upper explosion limit	:	no data available
Lower explosion limit	:	no data available
Vapour pressure	:	not determined
Relative vapour density	:	not determined
Relative density	:	no data available
Solubility(ies)		
Water solubility	:	slightly soluble
Partition coefficient: n-octanol/water	:	no data available
Auto-ignition temperature	:	not determined
Decomposition temperature	:	no data available
Viscosity		
Viscosity, kinematic	:	not determined
Explosive properties	:	No hazards to be specially mentioned.
Oxidizing properties	:	no data available

9.2 Other information

no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No decomposition if stored and applied as directed.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions	:	Stable under recommended storage conditions. No hazards to be specially mentioned.

10.4 Conditions to avoid

Conditions to avoid	:	Heat

10.5 Incompatible materials

Materials to avoid	:	Strong acids and strong bases Oxidizing agents

10.6 Hazardous decomposition products

Nitrogen oxides (NOx)
Carbon oxides
No decomposition if used as directed.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity	:	Acute toxicity estimate: 1 596 mg/kg Method: Calculation method
Acute inhalation toxicity	:	Acute toxicity estimate: 1,67 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method

Skin corrosion/irritation

Remarks: no data available

Serious eye damage/eye irritation

Remarks: no data available

Respiratory or skin sensitisation

Remarks: no data available

Germ cell mutagenicity

Genotoxicity in vitro	:	Remarks: no data available
Germ cell mutagenicity- Assessment	:	Not believed to be mutagenic

Carcinogenicity

Result: no data available

Carcinogenicity - Assessment	:	Not believed to be carcinogenic

Reproductive toxicity

Effects on fertility	:	Remarks: no data available
Reproductive toxicity - Assessment	:	Not believed to be reprotoxic

STOT - single exposure

Remarks: no data available

STOT - repeated exposure

Remarks: no data available

Aspiration toxicity

No aspiration toxicity classification

Further information

Remarks: no data available

The following toxicological data refer to:

3-Acetyl-6-methyl-2H-pyran-2,4(3H)-dione (CAS-No.: 520-45-6)

Acute toxicity

Acute oral toxicity : LD50 (Rat): 1 480 mg/kg
Method: DOT

Skin corrosion/irritation

Species: Rabbit
Exposure time: 4 h
Method: DOT
Result: No skin irritation

Serious eye damage/eye irritation

Species: Chicken eye
Exposure time: 4 h
Assessment: No eye irritation
Method: OECD Test Guideline 438
Result: No eye irritation
GLP: yes

Respiratory or skin sensitisation

Test Type: Local Lymph Node Assay
Species: Mouse
Method: OECD Test Guideline 429
Result: not sensitizing
GLP: yes

Germ cell mutagenicity

Genotoxicity in vitro : Test Type: Ames test
Species: Salmonella typhimurium
Result: negative

Reproductive toxicity

Effects on fertility : Remarks: no data available

STOT - single exposure

Remarks: no data available

STOT - repeated exposure

Remarks: no data available

Further information

Remarks: no data available

Benzyl alcohol (CAS-No.: 100-51-6)

Acute toxicity

Acute oral toxicity : LD50 (Rat): 1 610 mg/kg
Remarks: Literary reference

Acute inhalation toxicity : LC50 (Rat): > 4,178 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): 2 000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: Literary reference

Skin corrosion/irritation

Species: Rabbit
Exposure time: 4 h
Method: OECD Test Guideline 404
Result: No skin irritation

Serious eye damage/eye irritation

Species: Rabbit
Assessment: No eye irritation
Method: OECD Test Guideline 405
Result: moderate irritant

Respiratory or skin sensitisation

Test Type: Magnusson & Kligman
Species: Guinea pig
Result: not sensitizing
Remarks: Literary reference

Germ cell mutagenicity

Genotoxicity in vitro : Test Type: Ames test
Result: negative

: Test Type: Gene mutation
Species: mouse lymphoma cells
Result: equivocal

: Test Type: Chromosome aberration test in vitro
Result: positive

Genotoxicity in vivo : Test Type: In vivo micronucleus test
Species: Mouse
Application Route: ip

Dose: 50 -100-200 mg/kg
Result: negative

Reproductive toxicity

Species: Mouse, female
Application Route: Oral
Dose: 10d
Fertility: NOAEL: 550 mg/kg food

Repeated dose toxicity

Species: Rat
Application Route: Oral
Remarks: Literary reference

Further information

Remarks: May cause sensitisation of susceptible persons by skin contact.

Remarks: Dermal absorption possible

Remarks: High concentration of vapours may induce unconsciousness.

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish : Remarks: no data available

12.2 Persistence and degradability

Biodegradability : Result: no data available

12.3 Bioaccumulative potential

Bioaccumulation : Remarks: no data available

12.4 Mobility in soil

Distribution among environmental compartments : Remarks: no data available

12.5 Results of PBT and vPvB assessment

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

Additional ecological information : no data available

The following ecotoxicological data refer to:

3-Acetyl-6-methyl-2H-pyran-2,4(3H)-dione (CAS-No.: 520-45-6)

Toxicity to fish	:	NOEC (Cyprinus carpio (Carp)): 218 - 415 mg/l Exposure time: 72 h Analytical monitoring: no
Biodegradability	:	Test Type: OECD Coupled Units Concentration: 12 mg/l Result: biologically well degradable Biodegradation: 99 % Method: OECD Test Guideline 303 A GLP: no Test Type: Zahn-Wellens Test Concentration: 400 mg/l Result: biologically well degradable Biodegradation: 96 % Exposure time: 14 d Method: OECD Test Guideline 302 B Test Type: Closed Bottle test Concentration: 2 mg/l Result: Readily biodegradable. Biodegradation: 81 % Related to: Theoretical oxygen demand Exposure time: 30 d Method: OECD Test Guideline 301D GLP: no
Bioaccumulation	:	Remarks: no data available
Distribution among environmental compartments	:	Remarks: no data available
Assessment	:	This substance is not considered to be persistent, bioaccumulating and toxic (PBT)., This substance is not considered to be very persistent and very bioaccumulating (vPvB).
Additional ecological information	:	No data is available on the product itself.

Benzyl alcohol (CAS-No.: 100-51-6)

Toxicity to fish	:	LC50 (Leuciscus idus (Golden orfe)): 646 mg/l Exposure time: 48 h Method: DIN 38412 Part 15 Remarks: Literary reference LC50 (Pimephales promelas (fathead minnow)): 460 mg/l Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 400 mg/l Exposure time: 24 h Test Type: Immobilization Method: DIN 38412 L11 Remarks: Literary reference
Toxicity to algae	:	IC50 (Pseudokirchneriella subcapitata (algae)): 770 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 NOEC (Pseudokirchneriella subcapitata (algae)): 310 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 51 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211
Toxicity to microorganisms	:	EC50 (Pseudomonas putida): 658 mg/l Exposure time: 16 h Remarks: Literary reference
	:	EC50 (Photobacterium phosphoreum): 71 mg/l Exposure time: 30 min Remarks: Literary reference
Biodegradability	:	Test Type: Closed Bottle test Result: Readily biodegradable. Biodegradation: > 90,0 % Exposure time: 30 d Method: OECD Test Guideline 301D Remarks: Literary reference
Bioaccumulation	:	Bioconcentration factor (BCF): 4 Remarks: Literary reference
Distribution among environmental compartments	:	Adsorption/Soil Remarks: Literary reference

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product	:	Dispose of in accordance with local regulations. Contact waste disposal services. Dispose of contents/container in accordance with local regulation. Contact waste disposal services. Do not dispose of waste into sewer.
Contaminated packaging	:	Dispose of as unused product. Do not re-use empty containers.

SECTION 14: Transport information

IATA			Not dangerous goods
14.1	**UN number**	:	Not applicable
14.2	**Proper shipping name**	:	Not applicable
14.3	**Transport hazard class**	:	Not applicable
14.4	**Packing group**	:	Not applicable
14.5	**Environmental hazards**	:	no
IMDG			Not dangerous goods
14.1	**UN number**	:	Not applicable
14.2	**Proper shipping name**	:	Not applicable
14.3	**Transport hazard class**	:	Not applicable
14.4	**Packing group**	:	Not applicable
14.5	**Environmental hazards**	:	Marine pollutant: no
ADR		:	Not dangerous goods
14.1	**UN number**	:	Not applicable
14.2	**Proper shipping name**	:	Not applicable
14.3	**Transport hazard class**	:	Not applicable
14.4	**Packing group**	:	Not applicable
14.5	**Environmental hazards**	:	no
RID		:	Not dangerous goods
14.1	**UN number**	:	Not applicable
14.2	**Proper shipping name**	:	Not applicable
14.3	**Transport hazard class**	:	Not applicable
14.4	**Packing group**	:	Not applicable
14.5	**Environmental hazards**	:	no
DOT		:	Not dangerous goods
14.1	**UN number**	:	Not applicable
14.2	**Proper shipping name**	:	Not applicable
14.3	**Transport hazard class**	:	Not applicable
14.4	**Packing group**	:	Not applicable
14.5	**Environmental hazards**	:	no

TDG		:	Not dangerous goods
14.1	**UN number**	:	Not applicable
14.2	**Proper shipping name**	:	Not applicable
14.3	**Transport hazard class**	:	Not applicable
14.4	**Packing group**	:	Not applicable
14.5	**Environmental hazards**	:	no
14.6	**Special precautions for user**	:	none
14.7	**Transport in bulk according to Annex II of Marpol and the IBC Code**	:	Not applicable

SECTION 15: Regulatory information

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

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.
Not applicable

Water contaminating class (Germany) : WGK 1 slightly hazardous to water
Classification according to AwSV, Annex 1 (5.2)

15.2 Chemical safety assessment

not required

SECTION 16: Other information

Classification of the mixture:		**Classification procedure:**
Acute Tox. 4	H302	Calculation method
Acute Tox. 4	H332	Calculation method

Full text of H-Statements

H302 : Harmful if swallowed.
H332 : Harmful if inhaled.

Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; 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; 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; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Date format : dd.mm.yyyy

GB / EN

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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.