

SAFETY DATA SHEET (91/155/EWG)**DeguDent**

A Dentsply International Company

Solaris Flash-Liquid

Material no.		Version	1.0 / GB
Specification	155881	Release Date	13.10.2006
VA-Nr		Print Date	15.11.2006
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1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING**Product information**

Trade name	:	Solaris Flash-Liquid
Company	:	DeguDent GmbH Postfach 1364 D-63403 Hanau
Telephone	:	+49 (0)6181/59-5767
Telefax	:	+49 (0)6181/59-5879
Emergency telephone number	:	+49 (0)180 / 23 24-555
Use of the Substance / Preparation	:	For dental use only. For professional use only.

2. COMPOSITION/INFORMATION ON INGREDIENTS**Information on ingredients / Hazardous components**

• sulphuric acid		5% - 15%	
CAS-No.	7664-93-9	EC-No.	231-639-5
	C; R35		
• phosphoric acid		< 10%	
CAS-No.	7664-38-2	EC-No.	231-633-2
	C; R34		
• potassium tetrakis(cyano-C)aurate		0.1% - 1.0%	
CAS-No.	14263-59-3	EC-No.	238-145-9
	T+, N		
	R26/27/28, R32, R50/53		
• cobalt sulphate		0.01% - 0.25%	
CAS-No.	10124-43-3	EC-No.	233-334-2
	Carc.Cat.2; R49		
	Xn; R22		
	R42/43		
	N; R50, R53		

See chapter 16 for text of risk phrases

3. HAZARDS IDENTIFICATION

May cause cancer by inhalation.
Harmful by inhalation, in contact with skin and if swallowed.
Contact with acids liberates very toxic gas.
Irritating to eyes and skin.
Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Hydrocyanic acid may cause all degrees of poisoning.

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4. FIRST AID MEASURES**General advice**

The following recommendations in respect of first aid and therapy should be made available to all First Aid Officers and Doctors, who could be called upon to render first aid, before work with cyanide/hydrocyanic acid is started.

Observe self-protection

If signs of poisoning occur, consult a doctor immediately.

Possible signs of poisoning: headache, dizziness, drowsiness, nausea, seizures, unconsciousness, respiratory disturbance, cessation of breathing, cardiac arrest.

Move out of dangerous area.

Remove contaminated or saturated clothing immediately and dispose of safely.

Do not leave affected persons unattended.

In case of difficulties in breathing, supply oxygen. Employ artificial respiration if breathing ceases.

No artificial respiration, mouth-to-mouth or mouth to nose. Use suitable instruments/apparatus.

Keep warm and in a quiet place.

Place person on side in stable position if unconscious.

Inhalation

In case of difficulties in breathing, supply oxygen.

Employ artificial respiration if breathing ceases.

Skin contact

After contact with skin, wash immediately with plenty of water.

Eye contact

With eye held open, thoroughly rinse immediately with plenty of water for at least 10 minutes.

In case of persistent discomfort: Consult an ophthalmologist.

Ingestion

Call emergency doctor immediately (alarm report: cyanide / hydro-cyanic acid poisoning).

Do not induce vomiting.

Only when patient fully conscious:

Have the mouth rinsed with water.

Notes to physician

Possible signs of poisoning: headache, dizziness, drowsiness, nausea, seizures, unconsciousness, respiratory disturbance, cessation of breathing, cardiac arrest.

Therapy as for hydrocyanic acid poisoning.

Observe national methods of treatment.

Information about licensing of antidotes in different countries not available.

Symptomatic therapy:

administration of oxygen, artificial respiration, treatment of arrhythmias, treatment of spasmodic fit, correction of acid-base balance.

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5. FIRE-FIGHTING MEASURES**Suitable extinguishing media**

quenching powder, water

Extinguishing media which must not be used for safety reasons

carbon dioxide (CO₂)

Specific hazards during fire fighting

In the case of fire, the following hazardous smoke fumes may be produced: hydrocyanic acid. Under the action of acids (as well as carbon dioxide !) hydrocyanic acid is released which is combustible and may react with air to explosive gas mixtures.

Special protective equipment for fire-fighters

In the case of fire, wear respiratory protective equipment independent of surrounding air and chemical protective suit.

Further information

Water used to extinguish fire should not enter drainage systems, soil or stretches of water.

Ensure there are sufficient retaining facilities for water used to extinguish fire.

Contaminated fire-extinguishing water must be disposed of in accordance with the regulations issued by the appropriate local authorities.

Fire residues should be disposed of in accordance with the regulations.

Remove all sources of ignition.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions**

Wear complete chemical protective suit and Respiratory protective equipment independent of surrounding air.

Keep people away from and upwind of spill/leak.

Avoid breathing vapors/dust/mist.

Ensure sufficient ventilation. Avoid skin contact because of the danger of skin absorption.

Environmental precautions

Do not allow entrance in soil, stretches of water, drainage systems.

Notify responsible authorities in case of gas leakage or if product gets into stretches of water, soil, or drainage systems.

Methods for cleaning up

Absorb with liquid-binding material (e.g. inert absorbent universalbinder) pick up.

Pour into containers which can be tightly sealed.

Dispose of absorbed material in accordance with the regulations.

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Waste to be packed like clean product and to be marked. Identification label on packages not to be removed until recycling.

Additional advice

Concentration of hydrogen cyanide in surrounding air should be monitored (gas detection instrument).

7. HANDLING AND STORAGE**Handling****Safe handling advice**

Wear personal protective equipment.
Ensure suitable suction/aeration at the work place and with operational machinery.
Substances to be avoided: acid
The product should only be handled by trained personnel.
Set up safety and operation procedures.

Advice on protection against fire and explosion

Standard procedure for chemical fires.
The product itself does not burn.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Storage**Requirements for storage areas and containers**

Keep container tightly closed in a dry and well-ventilated place.
Store in the dark.

Further information

Unauthorised persons must not have access to storerooms.

Advice on common storage

Keep away from foodstuffs / feed.
Avoid contact with acids.

Storage stability

Recommended storage temperature:

5 - 35 °C

8. EXPOSURE CONTROLS / PERSONAL PROTECTION**Components with workplace control parameters****• phosphoric acid**

CAS-No.	7664-38-2	EC-No.	231-633-2
Control parameters	1 mg/m ³		Time Weighted Average (TWA):(EU ELV)
Control parameters	2 mg/m ³		Short Term Exposure Limit (STEL):(EU ELV)
Control parameters	1 mg/m ³		Time Weighted Average (TWA):(EH40 WEL)
Control parameters	2 mg/m ³		Short Term Exposure Limit (STEL):(EH40 WEL)

• cobalt sulphate

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CAS-No.	10124-43-3	EC-No.	233-334-2
Control parameters	0.1 mg/m ³		Time Weighted Average (TWA):(EH40 WEL)

Engineering measures

Ensure suitable suction/aeration at the work place and with operational machinery.

Personal protective equipment**Respiratory protection**

If Hydrogen cyanide occurs:

wear a self contained respiratory apparatus

Note time limit for wearing respiratory protective equipment.

If occurs of vapour / respirable aerosols:

Respirator with B-P3 combination filter

Respirator with ABEK-P3 combination filter

Hand protection

Chemical-resistant protective gloves (EN 374)

Glove material

Wear protective gloves made of the following materials: natural latex (NR), nitrile rubber (NBR), PVC., alkali-resistant, acid-proof

The selected protective gloves have to satisfy the specifications of EU Directive 89/689/EEC and the standard EN 374 derived from it.

Eye protection

Safety glasses with side-shields

Skin and body protection

Take care of your own personal safety.

Avoid contact with skin, eyes and clothing.

suitable protective clothing e.g. apron made of rubber or plastic
rubber boots

Hygiene measures

No eating, drinking, smoking, or snuffing tobacco at work.

Wash hands before breaks and at the end of workday.

Avoid contact with skin, eyes and clothing.

After contact with skin, wash immediately with plenty of water.

preventive skin protection

Cleanse and apply cream to skin after work.

Immediately change moistened and saturated work clothes.

Keep working clothes separately.

Protective measures

All precautionary measures indicated have to be observed.

If there is the possibility of skin/eye contact, the indicated hand/eye/body protection should be used.

The personal protective equipment used must meet the requirements of directive 89/686/EEC and amendments (CE certification).

9. PHYSICAL AND CHEMICAL PROPERTIES**Appearance**

Form	liquid
Colour	light pink
Odour	characteristic

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Safety data

pH	ca. 0.5
Boiling point/range	101 °C
Flash point	not relevant, since based on water
Flammability	n.a.
Lower explosion limit	n.a.
Upper explosion limit	n.a.
Density	1.1 g/cm ³ (20 °C)
Water solubility	completely soluble
Viscosity, dynamic	n.a.

Further information

Other information	Hydrocyanic acid may cause all degrees of poisoning.
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10. STABILITY AND REACTIVITY

Materials to avoid	Under the action of acids (as well as carbon dioxide !) hydrocyanic acid is released which is combustible and may react with air to explosive gas mixtures.
Hazardous decomposition products	hydrogen cyanide (hydrocyanic acid)

11. TOXICOLOGICAL INFORMATION

Sensitization	May cause sensitization by skin contact.
Carcinogenicity	Clues to possible carcinogenic effects in animal experiments. literature TRGS 905 "List of substances causing cancer, mutagenic material or being dangerous to reproduction"
Further information	Irritation and on occasion caustic effects to the skin and mucous membranes (eyes, respiratory channels, in the stomach/intestinal tracts after swallowing) are to be expected from local contact.
Human experience	Signs of poisoning: nausea, vomiting, cramps, unconsciousness and central respiratory arrest.

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12. ECOLOGICAL INFORMATION**Elimination information (persistence and degradability)****Behaviour in environmental compartments****Ecotoxicity effects****Further information on ecology**

Further Information	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Do not pour into drainage channels because of detrimental effect on water organisms.
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13. DISPOSAL CONSIDERATIONS**Product**

Disposal according to local authority regulations.

Recommendation:

Offer surplus and non-recyclable solutions to a licensed disposal company.

Waste to be packed like clean product and to be marked. Identification label on packages not to be removed until recycling.

Uncleaned packaging

Do not reuse empty containers and dispose of in accordance with the regulations issued by the appropriate local authorities.

If there is product residue in the emptied container, follow directions for handling on the container's label.

14. TRANSPORT INFORMATION**Land transport ADR/RID/GGVSE (Germany)**

Class	6.1
ADR/RID-Labels	6.1 (8)
UN-No	3289
Packaging group	II
orange warning plate	68 / 3289
Description of the goods (Technical name)	TOXIC LIQUID, CORROSIVE, INORGANIC, N.O.S. (potassium tetracyanoaurate(III), sulphuric acid)

Sea transport IMDG-Code/GGVSee

Class	6.1
Subsidiary risk	8
UN-No	3289
Packaging group	II
EmS	F-A, S-B
Proper technical name (Proper shipping name)	TOXIC LIQUID, CORROSIVE, INORGANIC, N.O.S.

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(potassium tetracyanoaurate(III), sulphuric acid)

Air transport ICAO-TI/IATA-DGR

Class	6.1
Subsidiary risk	8
UN-No	3289
Packaging group	II
Proper technical name (Proper shipping name)	
Toxic liquid, corrosive, inorganic, n.o.s.	
(potassium tetracyanoaurate(III), sulphuric acid)	

Inland waterway transport ADN/ADNR/GGVBinSch (Germany)

Class	6.1
ADR/RID-Labels	6.1 (8)
UN-No / Substance number	3289
Packaging group	II
Description of the goods (Technical name)	
TOXIC LIQUID, CORROSIVE, INORGANIC, N.O.S.	
(potassium tetracyanoaurate(III), sulphuric acid)	

Loading instructions/Remarks

IATA_C	ERG-Code 6C
IATA_P	ERG-Code 6C
IMDG	Clear of living quarters.
IMDG	IMDG Code segregation group 1 - Acids
IMDG	IMDG Code segregation group 7 - Heavy metals and their salts (incl. their organometallic compounds)

Transport/further information

Keep separate from foodstuffs, luxury foods, feedstuffs

15. REGULATORY INFORMATION**Labelling according to EC Directives****hazard-defining component(s)**

- potassium tetrakis(cyano-C)aurate
- cobalt sulphate
- sulphuric acid
- phosphoric acid

Symbol(s)	T Xi	Toxic Irritant
R-phrases(s)	R49 R20/21/22 R32 R36/38 R52/53	May cause cancer by inhalation. Harmful by inhalation, in contact with skin and if swallowed. Contact with acids liberates very toxic gas. Irritating to eyes and skin. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S-phrases(s)	S23 S53	Do not breathe spray. Avoid exposure - obtain special instructions before use.

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S28	After contact with skin, wash immediately with plenty of water.
S29	Do not empty into drains.
S45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S61	Avoid release to the environment. Refer to special instructions/safety data sheets.

National legislation

CMR category (cancerogenic/mutagenic/reprotoxic)	Substances which should be regarded as if they are carcinogenic to man. category 2
employment restriction	Note employment restrictions for pregnant and lactating women. Note employment restrictions for minors.
Other regulations	Other countries: observe the national regulations.

16. OTHER INFORMATION**Risk phrase (R phrase) texts**

- **sulphuric acid**
R35 Causes severe burns.
- **phosphoric acid**
R34 Causes burns.
- **potassium tetrakis(cyano-C)aurate**
R26/27/28 Very toxic by inhalation, in contact with skin and if swallowed.
R32 Contact with acids liberates very toxic gas.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- **cobalt sulphate**
R49 May cause cancer by inhalation.
R22 Harmful if swallowed.
R42/43 May cause sensitization by inhalation and skin contact.
R50 Very toxic to aquatic organisms.
R53 May cause long-term adverse effects in the aquatic environment.

Further information

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.

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