Safety Data Sheet (EC) No. 1907/2006

1. Product- and Company Identification

Trade name:	DC DUR cold (liquid), art. No. 714146
Manufacturer:	DC Dental Central Großhandelsges.mbH Carl-Zeiss-Str.2 **D-22946 Trittau, Germany**
Further information obtainable from:	Tel.: +49 (0)4154/8437 0 Fax: +49 (0)4154/8437 33
Information in case of emergency:	Same as above.

2. Composition/information on ingredients

Chemical characterization

Description:
Methyl methacrylate

Hazardous ingredients:

Description:	CAS No.:	EINECS:	INDEX-No.	Symbols:	R phrases	Conc.%
Methyl metacrylate ($C_5H_8O_2$)	80-62-6	201-297-1	607-035-00-6	F, Xi	R 11-37/38-43	60 – 100
N,N-Dimethyl-p-toluidine	99-97-8	202-805-4	612-056-00-9	T	R 23/24/25-33-52/53	<1

3. Hazards identification

Hazard symbols:
F Highly flammable
Xi Irritant

Special guidelines concerning dangers to humans and the environment:
Highly flammable. Irritating to respiratory system and skin. May cause sensitization by skin contact.

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4. First aid measures

General information:	Remove soaked clothing immediately. Medical treatment is necessary if symptoms occur that are obviously caused by skin or eye contact with the product or by inhalation of its vapours.
After Inhalation:	In case of inhalation remove casualty to fresh air and allow to rest. Seek medical advice.
After skin contact:	In case of contact with skin wash off immediately with soap and water. If skin irritation occurs, seek medical advice.
After eye contact:	In case of contact with eyes rinse thoroughly with plenty of water while keeping the eyelids apart. If irritation persists seek medical advice.
After swallowing:	Do not induce vomiting. Seek medical advice immediately.

5. Fire-fighting measures

Suitable extinguishing media:
Foam, dry powder, carbon dioxide

Unsuitable extinguishing media for safety reasons:
Water

Special protective equipment for fire fighting:
Wear self-contained breathing apparatus

6. Accidental release measures

Personal precautionary measures:
Assure appropriate air-flow. Wear protective clothing. Keep away sources of ignition. Use breathing apparatus if exposed to vapours/dust/mist/aerosol.

Environmental protection measures:
Do not allow to get into drains/surface water/groundwater.

Measures for cleaning:

Large quantities:	Remove mechanically (hydraulic pump). Assure explosion-safe measures!
Smaller quantities:	Pick up with liquid absorbing material (sand, diatomaceous earth, acid absorbent, sawdust or tissues)

7. Handling and storage

Handling

Instructions on safe handling:
Keep container well closed. Assure appropriate air-flow.

Information on fire and explosion protection:
Keep away from sources of ignition - no smoking. Take precautionary measures against static discharges. In the event of fire, cool the endangered containers with water.

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Storage:

Requirements for storage areas and containers:
Storage temperature: +10 °C to +25 °C
Short term max.: - 20 °C to +30 °C

Store in original container only. Temperatures should never exceed 25 °C. Fill container up to 90% max, because enclosed oxygen (air) is needed for stabilization purposes. Keep out of direct sunlight. Special explosion safe environment needed to store quantities larger than 5l per container.

Additional Information:
If the liquid should cool down to a temperature of lower than 10°C some of the ingredients may crystallize and sink to the bottom. If the materials temperature rises up to room temperature again these crystals dissolve again. The properties of the material will not be affected by this phenomena.

8. Exposure controls/personal protection

Components or products of decomposition according to point 10, with limit values related to the place of work whih require monitoring:
LT value for methyl metacrylate: 210 mg/m³
Maximum limitation category: I

Remarks:
Y: Danger of damage to unborn children is not to be expected as long as the LT-value does not exceed above mentioned amount.

General protective and hygiene measures:	Do not inhale vapours. Avoid contact with eyes and skin. Keep working clothes away from regular clothing. Take off contaminated clothes immediately. Follow the regular standards of occupational hygiene. Clean skin thoroughly after work; apply skin cream.
Eye protection:	Wear protective goggles.
Respiratory protection:	Breathing apparatus in case of high concentrations.
Hand protection:	Wear protective gloves made of butyl rubber (0,7mm), break through time 300 min (EN 374). In practice, due to variable exposure conditions, this information can only be an aid to orientation for the selection of a suitable chemical protection glove. In particular, this information does not substitute suitability tests by the user.
Body protection:	When handling larger quantities wear face shield, apron and chemical resistant boots
General information:	Gloves should be changed regularly, especially after over excessive contact with the product. A different type of glove should be considered for each workplace.

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9. Physical and chemical properties

Form:	Liquid.
Colour:	Colourless.
Odour:	Ester-like, slightly sweet, stinging.
Melting temperature:	-48,2° C
Boiling temperature:	100,3° C (bei 1013 hPa)
Flash point:	10° C (DIN 51755)
Ignition temperature:	430° C (DIN 51794)
Self ignition ability:	Not determined.
Explosion limit:	Lower: 1,7 % (V) Upper: 12,5 % (V)
Vapour pressure at 20° C:	38,7 hPa
Density at 20° C:	0,94 g/cm³
Relative vapour density related to air:	>1 (at 20° C)
Solubility in water:	15,9 g/l (at 20° C)
Qualitative solubility:	Miscible with most organc solvents.
n-Octanol/ water partition coefficient:	Log Pow 1,38 (measured)
Dynamica viscosity:	0,63 mPa s (at 20° C, Brookfield)
pH value:	Not applicable.

10. Stability and reactivity

Thermal decomposition:
No decomposition when used as directed.

Hazardous reactions:
Polymerization with heat evolution may occur in the presence of radical forming substances (e.g. peroxides), reducing substances, and/or heavy metal ions.

Hazardous decomposition products:
None when used as directed.

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11. Toxicological information

The following information is related to the component methyl methacrylate.

Acute oral toxicity:
>5.000 mg/kg; practically non-toxic if swallowed; LD50 rat, OECD 401

Acute inhalational toxicity:
29,8 mg/l; low toxicity by inhalation; LC50 rat, exposure 4h

Acute dermal toxicity:
>5.000 mg/kg; practically non-toxic in contact with skin; LD50 rabbit

Irritant effect on skin:
not irritating; rabbit; exposure 24h; FDA 1959 Draize, occlusive

Irritant effect on eyes:
not irritating; rabbit; Draize

Sensitization:
In sensitization tests on guinea pigs with and without adjuvant, both positive and negative results were found. In humans various types of allergic reactions have been observed (symptoms: headache, eye irritations, skin affections).

Toxicity on repeated administration:
NOAEL 25ppm; at said dosis no adverse effects were observed. At higher doses adverse effects were observed; rat; inhalative 2 a, 25-400ppm (Findings: damage to mucous membranes in the nose at 400ppm)
NOAEL 2000ppm; rat; drinking water 2 a, 6-2000ppm (Findings: no toxic effects)

Mutagenicity:
Positive as well as negative results within in vitro mutagenicity / genotoxicity tests. No experimental indication of genotoxicity in vivo available. In summary not mutagenic according to internationally accepted criteria.

Carcinogenicity:
Non-carcinogetig in inhalation and feeding studies carried out on rats, mice and dogs.

Reprotoxicity / teratogenicity:
No indications of toxic effects were observed in reproduction studies in animals.

Additional information: Avoid contact with the skin and eyes and inhalation of the product vapours.

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12. Ecological information

Information on elimination (persistence and degradability)

Biodegradability:
readily degradable, ca. 94 %, Method: OECD 301 C, 14d

Ecotoxicological effect

Fish toxicity (LC50): > 79 mg/l, Oncorhynchus mykiss, rainbow trout, OECD 203 GLP, 96h
Daphnia toxicity (EC50): 69 mg/l, Daphnia magma, OECD 202, 48h
Algae toxicity (EC3): 37 mg/l, Scenedesmus quadricauda, DIN 38412 section 9, 8d
Algae toxicity (EC50): 170 mg/l, Selenastrum capricornutum, OECD 201, 96h
Bakteria toxicity (EC0): 100 mg/l, Pseudomonas putida

Additional ecological information

Do not allow to enter soil, waterways or waste water.

13. Disposal considerations

Product (Components, powder and liquid)

European waste code:
07 02 99

Waste name:
Not yet cured acrylic leftovers, compounds or components.

Recommendations:
Must be disposed of in accordance with the regulations of the local authorities and the disposal company in a suitable and licensed facility.

Already cured acrylic leftovers (both components mixed and cured)

European waste code:
17 02 03

Waste name:
other cured acrylic waste

Recommendations:
Can be disposed of in accordance with the regulations of the local authorities and the disposal company in a suitable and licensed facility.

Contaminated packaging

Recommendations:
Can be burned in accordance to local regulations. Dispose decontaminated packaging at local recycling facilities.

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14. Transport information

Overland transport ADR/RID/GGVSE

Class:	3 flammable liquid
Dangerous cargo number:	339
UN Number:	1247
Packaging group:	II
Label:	3
Declaration of the good:	UN 1247 Methyl methacrylate, Monomer, stabilized, 3, II

Inland waterway transport ADNR

Class:	3 flammable liquid
UN Number:	1247
Packaging group:	II
Label:	3
Declaration of the good:	UN 1247 Methyl methacrylate, Monomer, stabilized, 3, II

Shipment by sea IMDG/GGVSee

Class:	3 flammable liquid
UN Number:	1247
EmS:	F-E, S-D
Marine pollutant:	--
Packaging group:	II

Proper shipping name: UN 1247 Methyl methacrylate, Monomer, stabilized, II

Air transport ICAO/IATA

Class:	3 flammable liquid
UN Number:	1247
Packaging group:	II

Proper shipping name: UN 1247 Methyl methacrylate, Monomer, stabilized

DOT

UN 1247 Methyl methacylate, monomer, stabilized

15. Regulatory information

Labelling in accordance to EC directive GefStoffV:
requires labelling

Hazardous component for labelling:
contains methyl methacrylate

Hazard symbols:

F Highly flammable
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Risk phrases (R-phrases):
R 11 Highly flammable
R 37/38 Irritating to respiratory system and skin
R 43 May cause sensitization by skin contact

Safety phrases (S-phrases):
S 24 Avoid contact with skin
S 37 Wear suitable gloves
S 46 If swallowed, seek medical advice immediately and show container or label

National regulations (for Germany only):
Technical regulation for air: 5.2.5
Water hazards class: 1 (VwVwS, Annex 2)

Occupational restrictions:
Note for juveniles
Note for pregnant women and nursing mothers

16. Other information

This product is normally supplied in a stabilized form. If the permissible storage period and/or storage temperature is exceeded, the product may polymerize with heat evolution.

References:
Relevant manuals and publications, toxicological and ecological studies of different manufacturers. (SIAR, OECD-SIDS, RTK public files).

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.