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

· ***Date of compilation:*** *28.02.2005*
· ***1.1 Product identifier***

· ***Trade name: Melwic***
· ***1.2 Relevant identified uses of the substance or mixture and uses advised against***
No further relevant information available.

· ***Application of the substance / the preparation:*** *Algicide*

· ***1.3 Details of the supplier of the safety data sheet***
· ***Manufacturer / Supplier:***
Melspring International B.V. *Phone: +31 (0) 26 - 38420 - 00*
Arnhemsestraatweg 8 *Fax: +31 (0) 26 - 38420 - 11*
NL-6881 NG Velp
· ***E-mail address of the competent person responsible for the Safety Data Sheet:*** *sdb@csb-online.de*

· ***Informing department:*** *Sales / Technics*
· ***1.4 Emergency telephone number:*** *As above or next toxicological information centre.*

SECTION 2: Hazards identification

· ***2.1 Classification of the substance or mixture***
· ***Classification according to Regulation (EC) No 1272/2008***

GHS02 flame

Flam. Liq. 3 *H226 Flammable liquid and vapour.*

GHS05 corrosion

Skin Corr. 1B *H314 Causes severe skin burns and eye damage.*

GHS09 environment

Aquatic Acute 1 *H400 Very toxic to aquatic life.*
Aquatic Chronic 2 *H411 Toxic to aquatic life with long lasting effects.*
· ***Classification according to Directive 67/548/EEC or Directive 1999/45/EC***

Xi; Irritant

R36/38: *Irritating to eyes and skin.*
R10: *Flammable.*
· ***Classification system:***
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
· ***2.2 Label elements***
· ***Labelling according to Regulation (EC) No 1272/2008***
The product is classified and labelled according to the CLP regulation.
· ***Hazard pictograms***

GHS02 GHS05 GHS09

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· ***Signal word*** *Danger*

· ***Hazard-determining components of labelling:***
Didecyldimethylammonium chloride
· ***Hazard statements***
H226 Flammable liquid and vapour.
H314 Causes severe skin burns and eye damage.
H400 Very toxic to aquatic life.
H411 Toxic to aquatic life with long lasting effects.
· ***Precautionary statements***

P101	*If medical advice is needed, have product container or label at hand.*
P102	*Keep out of reach of children.*
P103	*Read label before use.*
P210	*Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.*
P260	*Do not breathe mist/vapours/spray.*
P280	*Wear protective gloves/protective clothing/eye protection/face protection.*
P301+P330+P331	*IF SWALLOWED: rinse mouth. Do NOT induce vomiting.*
P303+P361+P353	*IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.*
P305+P351+P338	*IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*
P315	*Get immediate medical advice/attention.*
P304+P340	*IF INHALED: Remove person to fresh air and keep comfortable for breathing.*

· ***2.3 Other hazards***
· ***Results of PBT and vPvB assessment***
· ***PBT:*** *Not applicable.*
· ***vPvB:*** *Not applicable.*

SECTION 3: Composition/information on ingredients

· ***3.2 Chemical characterisation: Mixtures***
· ***Description:*** *Mixture of the substances listed below with nonhazardous additions.*

· ***Dangerous components:***

CAS: 7173-51-5 *EINECS: 230-525-2* *Index number: 612-131-00-6*	*Didecyldimethylammonium chloride* *C R34; Xn R22; N R50* *Acute Tox. 3, H301; Skin Corr. 1B, H314; Aquatic Acute 1, H400 (M=10); Aquatic Chronic 1, H410*	*5-<10%*
CAS: 67-63-0 *EINECS: 200-661-7* *Index number: 603-117-00-0* *Reg.nr.: 01-2119457558-25-XXXX*	*Propan-2-ol* *Xi R36; F R11* *R67* *Flam. Liq. 2, H225; Eye Irrit. 2, H319; STOT SE 3, H336*	*3-<10%*

· ***Additional information:*** *For the wording of the listed risk phrases refer to section 16.*

SECTION 4: First aid measures

· ***4.1 Description of first aid measures***
· ***General information:*** *Remove contaminated clothing.*
· ***After inhalation:*** *Supply fresh air; consult doctor in case of symptoms.*
· ***After skin contact:***
Instantly wash with water and soap and rinse thoroughly.
Immediate medical treatment necessary. Failure to treat burns can prevent wounds from healing.

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· **After eye contact:**
Rinse opened eye for several minutes under running water.
Remove contact lenses, if present and easy to do.
Use eye protection.
Call a doctor immediately.
· **After swallowing:**
Do NOT induce vomiting.
Rinse out mouth and then drink plenty of water.
In case of persistent symptoms consult doctor.
· **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **4.3 Indication of any immediate medical attention and special treatment needed** symptomatic treatment

SECTION 5: Firefighting measures

· **5.1 Extinguishing media**
· **Suitable extinguishing agents**
Carbon dioxide (CO_2), extinguishing powder or water spray/fog. Fight larger fires with water spray/fog or alcohol-resistant foam.
· **For safety reasons unsuitable extinguishing agents** Water with a full water jet.
· **5.2 Special hazards arising from the substance or mixture**
Can be released in case of fire:
Nitrogen oxides (NOx)
Hydrogen chloride (HCl)
Carbon monoxide (CO) and Carbon dioxide (CO_2)
Under certain fire conditions, traces of other toxic gases cannot be excluded.
· **5.3 Advice for firefighters**
· **Protective equipment:** Wear self-contained breathing apparatus.
· **Additional information**
Cool endangered containers with water spray jet.
Collect contaminated fire fighting water separately. It must not enter drains.

SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**
Ensure adequate ventilation.
Wear protective clothing.
Remove all ignition sources.
Keep people at a distance and stay on the windward side.
Avoid contact with skin and eyes.
Do not breathe vapour.
· **6.2 Environmental precautions:**
Do not allow to enter drainage system, surface or ground water.
Inform respective authorities in case product reaches water or sewage system.
· **6.3 Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose of the material collected according to regulations.
· **6.4 Reference to other sections**
See Section 8 for information on personal protection equipment.

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SECTION 7: Handling and storage

· ***7.1 Precautions for safe handling***
Ensure good ventilation/exhaustion at the workplace.
Keep away from heat and direct sunlight.
Avoid skin and eye contact under any circumstances.
Avoid breathing vapours.
Make sure that all applicable workplace limits are observed.
· ***Information about protection against explosions and fires:***
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
Do not spray on flames or red-hot objects.
The product forms flammable fumes when heated.

· ***7.2 Conditions for safe storage, including any incompatibilities***
· ***Storage***
· ***Requirements to be met by storerooms and containers:***
Observe all local and national regulations for storage of water polluting products.
· ***Information about storage in one common storage facility:***
Store away from foodstuffs.
Store away from oxidizers.
· ***Further information about storage conditions:***
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.
Protect from heat and direct sunlight.
Protect from frost.
Store in a locked cabinet or with access restricted to specifically instructed persons.
Store only in the original container.
· ***7.3 Specific end use(s)*** *No further relevant information available.*

SECTION 8: Exposure controls/personal protection

· ***Additional information about design of technical systems:*** *No further data; see item 7.*

· ***8.1 Control parameters***

· ***Components with critical values that require monitoring at the workplace:***	
67-63-0 Propan-2-ol (3-<10%)	
WEL (Great Britain)	*Short-term value: 1250 mg/m³, 500 ppm* *Long-term value: 999 mg/m³, 400 ppm*

· ***DNELs***
no data available

7173-51-5 Didecyldimethylammonium chloride		
Dermal	*DNEL long-term exposure - systemic effects*	*8.6 mg/kg bw/d (worker)*
Inhalative	*DNEL long-term exposure - systemic effects*	*18.2 mg/m³ (worker)*
67-63-0 Propan-2-ol		
Oral	*DNEL long-term exposure - systemic effects*	*26 mg/kg bw/d (general population)*
Dermal	*DNEL long-term exposure - systemic effects*	*319 mg/kg bw/d (general population)*
		888 mg/kg bw/d (worker)
Inhalative	*DNEL long-term exposure - systemic effects*	*89 mg/m³ (general population)*
		500 mg/m³ (worker)

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· **PNECs**
no data available

7173-51-5 Didecyldimethylammonium chloride	
PNEC	2 µg/l (aqua (freshwater)) (Assessment factor 10)
	0.29 µg/l (aqua (intermittent releases)) (Assessment factor 100)
	0.2 µg/l (aqua (marine water)) (Assessment factor 100)
	2.82 mg/kg (sediment (freshwater)) (Assessment factor 1)
	0.28 mg/kg (sediment (marine water)) (Assessment factor 10)
	1.4 mg/kg (soil) (Assessment factor 50)
	0.595 mg/l (STP (sewage treatment plant)) (Assessment factor 10)
67-63-0 Propan-2-ol	
PNEC	140.9 mg/l (aqua (freshwater)) (Assessment factor 1)
	140.9 mg/l (aqua (intermittent releases)) (Assessment factor 1)
	140.9 mg/l (aqua (marine water)) (Assessment factor 1)
	552 mg/kg (sediment (freshwater))
	552 mg/kg (sediment (marine water))
	28 mg/kg (soil)
	2251 mg/l (STP (sewage treatment plant)) (Assessment factor 1)

· **Additional information:** The lists that were valid during the compilation were used as basis.

· **8.2 Exposure controls**
· **Personal protective equipment**
· **General protective and hygienic measures**
Keep away from foodstuffs, beverages and food.
Avoid contact with the eyes and skin.
Wash hands during breaks and at the end of the work.
· **Breathing equipment:**
If all workplace limits are observed and good ventilation is ensured, no special precautions necessary.
· **Protection of hands:**
Protective gloves
To avoid skin problems reduce the wearing of gloves to the required minimum.
Check the permeability prior to each renewed use of the glove.
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.
· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **Eye protection:** Tightly sealed safety glasses
· **Body protection:** Body protection must be chosen depending on activity and possible exposure.
· **Limitation and supervision of exposure into the environment**
Do not allow to enter drainage system, surface or ground water.

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SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	liquid
Colour:	blue
· **Smell:**	characteristic
· **Odour threshold:**	not determined
· **pH-value at 20 °C:**	7.7
· **Change in condition**	
Melting point/Melting range:	not applicable
Boiling point/Boiling range:	> 80 °C
· **Flash point:**	52 °C (ASTM D93 (Pensky-Martens))
· **Inflammability (solid, gaseous)**	not applicable
· **Ignition temperature:**	> 300 °C
· **Decomposition temperature:**	not determined
· **Self-inflammability:**	Product is not selfigniting.
· **Danger of explosion:**	Product is not explosive.
· **Critical values for explosion:**	
Lower:	~2 Vol %
Upper:	~13 Vol %
· **Oxidising properties**	not classified as oxidising
· **Vapor pressure at 20 °C:**	23 hPa
· **Density at 20 °C:**	< 1.0 g/cm³
· **Bulk density:**	not applicable
· **Relative density**	not determined
· **Vapour density (AIR = 1):**	not determined
· **Evaporation rate**	not determined
· **Solubility in / Miscibility with**	
Water:	fully miscible
· **Organic solvents:**	not determined
· **Partition coefficient (n-octanol/water):**	no data available
· **Viscosity:**	
dynamic:	not determined
kinematic:	not determined
· **9.2 Other information**	No further relevant information available.

SECTION 10: Stability and reactivity

· **10.1 Reactivity** see 10.3
· **10.2 Chemical stability**
· **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
Avoid impact, friction, heat, sparks, electrostatic charges.
· **10.3 Possibility of hazardous reactions** No dangerous reactions known.

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· ***10.4 Conditions to avoid*** *No further relevant information available.*
· ***10.5 Incompatible materials:***
Strong oxidizing agents
Strong acids
· ***10.6 Hazardous decomposition products:***
Nitrogen oxides (NOx)
Hydrogen chloride (HCl)
Carbon monoxide (CO) and Carbon dioxide (CO_2)

SECTION 11: Toxicological information

· ***11.1 Information on toxicological effects***
· ***Acute toxicity:***

· **LD/LC50 values that are relevant for classification:**		
7173-51-5 Didecyldimethylammonium chloride		
Oral	LD50	238 mg/kg (rat) (OECD 401)
Dermal	LD50	3342 mg/kg (rabbit)
67-63-0 Propan-2-ol		
Oral	LD50	3600 mg/kg (mouse)
		4570 - 5045 mg/kg (rat)
		6410 mg/kg (rabbit)
	LDLo	3570 mg/kg (human)
Dermal	LD50	12800 - 13400 mg/kg (rabbit)
Inhalative	LC50/4 h	30 - 46.5 mg/l (rat)

· ***Primary irritant effect:***
· ***on the skin:*** *Corrosive to skin and mucous membranes.*
· ***on the eye:*** *Causes serious eye damage.*
· ***Subacute to chronic toxicity:*** *no data available*
· ***Additional toxicological information:***
The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version:
Corrosive
· ***Sensitisation*** *No sensitizing effect known.*
· ***Repeated dose toxicity*** *no data / no sufficient data available*
· ***CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)***
According to present knowledge no CMR-effects known.

SECTION 12: Ecological information

· ***12.1 Toxicity***

· **Aquatic toxicity:**	
7173-51-5 Didecyldimethylammonium chloride	
EC10/16 h	0.13 mg/l (pseudomonas putida) (DIN 38412 Part 8)
EC50/3 h	27.2 mg/l (bacteria)
	11 mg/l (bacteria) (OECD 209)
EC50/48 h	0.057 mg/l (water flea (daphnia magna)) (OECD Guideline 202)
EbC50/96 h	0.026 mg/l (algae (selenastrum capricornutum)) (OECD 201)
ErC50/72 h	0.062 mg/l (algae (pseudokirchneriella subcapitata)) (OECD Guideline 201)

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LC0/96 h	*0.97 mg/l (zebra fish (danio rerio)) (OECD Guideline 203)*
LC50/96 h	*0.19 mg/l (fathead minnow (pimephales promelas)) (US-EPA)*
	1.0 mg/l (rainbow trout (oncorhynchus mykiss)) (OECD 203)
NOEC	*0.010 mg/l (water flea (daphnia magna)) ((exposure time: 21d) OECD 211)*
	0.032 mg/l (zebra fish (danio rerio)) ((exposure time: 34d) OECD 210)
67-63-0 Propan-2-ol	
EC50/24 h	*> 1000 mg/l (water flea (daphnia magna))*
EC50/48 h	*13299 mg/l (water flea (daphnia magna))*
IC50/72 h	*> 1000 mg/l (algae (Scenedesmus subspicatus))*
LC50/48 h	*8970 mg/l (leuciscus idus)*
LC50/96 h	*9640 mg/l (fathead minnow (pimephales promelas))*

· ***12.2 Persistence and degradability*** *No further relevant information available.*
· ***12.3 Bioaccumulative potential*** *No further relevant information available.*
· ***12.4 Mobility in soil*** *No further relevant information available.*
· ***Additional ecological information:***
· ***Chemical Oxygen Demand (COD-value):*** *not determined*
· ***Biochemical Oxygen Demand (BOD5-value):*** *not determined*
· ***General notes:***
Do not allow product to reach ground water, water bodies or sewage system.
Danger to drinking water if even small quantities leak into soil.
Water hazard class 2 (Self-assessment): hazardous for water
· ***12.5 Results of PBT and vPvB assessment***
· ***PBT:*** *Not applicable.*
· ***vPvB:*** *Not applicable.*
· ***12.6 Other adverse effects*** *No further relevant information available.*

SECTION 13: Disposal considerations

· ***13.1 Waste treatment methods***
· ***Recommendation*** *Disposal must be made according to official regulations.*
· ***European waste catalogue:***
Waste disposal key numbers from EWC have to be assigned depending on origin and processing.

· ***Uncleaned packagings:***
· ***Recommendation:*** *Disposal must be made according to official regulations.*
· ***Recommended cleaning agent:*** *Water, if necessary with cleaning agent.*

SECTION 14: Transport information

· ***14.1 UN-Number***	
· ***ADR, IMDG, IATA***	*UN2920*
· ***14.2 UN proper shipping name***	
· ***ADR***	*UN2920 CORROSIVE LIQUID, FLAMMABLE, N.O.S., ENVIRONMENTALLY HAZARDOUS*
· ***IMDG***	*CORROSIVE LIQUID, FLAMMABLE, N.O.S. (DIDECYLDIMETHYLAMMONIUM CHLORIDE), MARINE POLLUTANT*
· ***IATA***	*CORROSIVE LIQUID, FLAMMABLE, N.O.S.*

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· **14.3 Transport hazard class(es)**

· **ADR**

· **Class**	8 (CF1) Corrosive substances.
· **Label**	8+3

· **IMDG**

· **Class**	3 Flammable liquids.
· **Label**	8/3

· **IATA**

· **Class**	8 Corrosive substances.
· **Label**	8 (3)

· **14.4 Packing group**	
· **ADR, IMDG, IATA**	II

· **14.5 Environmental hazards:**	Product contains environmentally hazardous substances: DIDECYLDIMETHYLAMMONIUM CHLORIDE
· **Marine pollutant:**	Symbol (fish and tree)
· **Special marking (ADR):**	Symbol (fish and tree)

· **14.6 Special precautions for user**	Warning: Corrosive substances.
· **Kemler Number:**	83
· **EMS Number:**	F-E,S-C

· **14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	not determined

· **Transport/Additional information:**	Transport by post may be prohibited or restricted.

· **ADR**	
· **Excepted quantities (EQ):**	E2
· **Limited quantities (LQ):**	1L
· **Excepted quantities (EQ)**	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· **Transport category:**	2
· **Tunnel restriction code:**	D/E

· **IMDG**	
· **Limited quantities (LQ)**	5L

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· **Excepted quantities (EQ)**	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· **UN "Model Regulation":**	UN2920, CORROSIVE LIQUID, FLAMMABLE, N.O.S., ENVIRONMENTALLY HAZARDOUS, 8 (3), II

SECTION 15: Regulatory information

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

· **National regulations**

· **Information about limitation of use:** Employment restrictions concerning young persons must be observed.

· **Decree to be applied in case of technical fault:** Directive 96/82/EC does not apply.

· **Water hazard class:** Water hazard class 2 (Self-assessment): hazardous for water

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Reasons for changes:**
The Material Safety Data Sheet has been revised. Changes in the respective chapters are characterized in the left side edge by *.
Changes in classification and labelling
Revised transport classification

· **Relevant phrases**
The(se) R-phrase(s) resp.H-statement(s) are those of the ingredient(s) and do(es) NOT represent the classification of the preparation/mixture.
H225 Highly flammable liquid and vapour.
H301 Toxic if swallowed.
H314 Causes severe skin burns and eye damage.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

R11 Highly flammable.
R22 Harmful if swallowed.
R34 Causes burns.
R36 Irritating to eyes.
R50 Very toxic to aquatic organisms.
R67 Vapours may cause drowsiness and dizziness.

· **Department issuing MSDS:**
C.S.B. GmbH Phone: +49 - 2151 - 652086-0
Düsseldorfer Str. 113 Fax: +49 - 2151 - 652086-9
47809 Krefeld / Germany

· **Abbreviations and acronyms:**
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organisation

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ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
Flam. Liq. 2: Flammable liquids, Hazard Category 2
Flam. Liq. 3: Flammable liquids, Hazard Category 3
Acute Tox. 3: Acute toxicity, Hazard Category 3
Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B
Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3
Aquatic Acute 1: Hazardous to the aquatic environment - AcuteHazard, Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - Chronic Hazard, Category 1
Aquatic Chronic 2: Hazardous to the aquatic environment - Chronic Hazard, Category 2

· ***Sources:*** *These data are based on information submitted by pre-suppliers.*

· **** Data compared to the previous version altered.***