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

1.1. Product identifier

Alphacool Apex Liquid ECO clear

Product group: Mixtures

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

Use of the substance/mixture

Heat transfer fluids

1.3. Details of the supplier of the safety data sheet

Company name:	Alphacool International GmbH Tochtergesellschaft		
Street:	Marienberger Str. 1		
Place:	D-38122 Braunschweig		
Telephone:	+49 (0) 531 28874 - 0	Telefax:	+49 (0) 531 28874 - 22
E-mail:	info@alphacool.com		
Contact person:	Thomas Schäfer	Telephone:	0531 28874-0
E-mail:	+49 (0) 531 28874 - 0		
Internet:	www.alphacool.com		
Responsible Department:	Forschung & Entwicklung		

1.4. Emergency telephone number:

+49 (0) 6131 19240

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GB CLP Regulation

This mixture is not classified as hazardous in accordance with GB CLP Regulation.

2.2. Label elements

2.3. Other hazards

No information available for acute dermal and inhalative toxicity

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Relevant ingredients

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (GB CLP Regulation)			
7732-18-5	water			to 100%
	213-791-2			
57-55-6	1,2-Propanediol			L %
	200-338-0			
95-14-7	Benzotriazole			VL %
	202-394-1			
	Acute Tox. 4, Eye Irrit. 2, Aquatic Chronic 2; H302 H319 H411			
3302-10-1	3,5,5-Trimethylhexansäure			VL %
	221-975-0		01-2119517580-45	
	Acute Tox. 4, Skin Irrit. 2, Eye Dam. 1; H302 H315 H318			
39464-70-5	Phenylpolyglykolphosphorsäureester			VL %
	609-691-9			
	Skin Irrit. 2, Eye Irrit. 2; H315 H319			
1310-58-3	potassium hydroxide; caustic potash			VL %
	215-181-3	019-002-00-8		
	Acute Tox. 4, Skin Corr. 1A; H302 H314			

Full text of H and EUH statements: see section 16.

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
57-55-6	200-338-0	1,2-Propanediol	L %
	inhalation: LC50 = 317042 mg/l (vapours); dermal: LD50 = >2000 mg/kg; oral: LD50 = 22000 mg/kg		
95-14-7	202-394-1	Benzotriazole	VL %
	oral: LD50 = 560 mg/kg		
3302-10-1	221-975-0	3,5,5-Trimethylhexansäure	VL %
	dermal: LD50 = >2000 mg/kg; oral: LD50 = 1160 mg/kg		
39464-70-5	609-691-9	Phenylpolyglykolphosphorsäureester	VL %
	oral: LD50 = >2000 mg/kg		
1310-58-3	215-181-3	potassium hydroxide; caustic potash	VL %
	oral: LD50 = 273 mg/kg Skin Corr. 1A; H314: >= 5 - 100 Skin Corr. 1B; H314: >= 2 - < 5 Skin Irrit. 2; H315: >= 0,5 - < 2 Eye Irrit. 2; H319: >= 0,5 - < 2		

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

No special measures are necessary.

After inhalation

Provide fresh air. No special measures are necessary.

After contact with skin

Wash with plenty of water. Take off contaminated clothing and wash it before reuse. In case of skin irritation, consult a physician.

After contact with eyes

Rinse immediately carefully and thoroughly with eye-bath or water. In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

After ingestion

Rinse mouth immediately and drink 1 glass of of water. Rinse mouth immediately and drink plenty of water.

4.2. Most important symptoms and effects, both acute and delayed

No special measures are necessary.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically. No special measures are necessary.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings.

Unsuitable extinguishing media

Full water jet

5.2. Special hazards arising from the substance or mixture

Non-flammable. In case of fire: Wear self-contained breathing apparatus.

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus. Use water spray jet to protect personnel and to cool endangered containers.

Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General advice

Use personal protection equipment.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Dilute with plenty of water.

6.3. Methods and material for containment and cleaning up

Other information

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

6.4. Reference to other sections

Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

No special fire protection measures are necessary.

Advice on protection against fire and explosion

No special fire protection measures are necessary.

Advice on general occupational hygiene

Take off contaminated clothing. Wash hands before breaks and after work. When using do not eat, drink, smoke, sniff.

Further information on handling

No special fire protection measures are necessary.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed. No special fire protection measures are necessary.

Hints on joint storage

No special measures are necessary.

7.3. Specific end use(s)

Heat transfer fluids

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m³	fibres/ml	Category	Origin
1310-58-3	Potassium hydroxide	-	2		STEL (15 min)	WEL
57-55-6	Propane-1,2-diol, total vapour and particulates	150	474		TWA (8 h)	WEL

8.2. Exposure controls

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear eye protection/face protection.

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Skin protection

Use of protective clothing.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Colour:	clear
Odour:	neutral
Odour threshold:	not determined

		Test method
Melting point/freezing point:	not determined	
Boiling point or initial boiling point and boiling range:	100 °C	

Flammability:	not applicable	
	not applicable	
Lower explosion limits:	not determined	
Upper explosion limits:	not determined	
Flash point:	>100 °C	
Auto-ignition temperature:	not determined	
Decomposition temperature:	not determined	
pH-Value:	8,9	
Viscosity / kinematic:	not determined	
Water solubility:	easily soluble	
Solubility in other solvents		
not determined		
Dissolution rate:	not determined	
Partition coefficient n-octanol/water:	not determined	
Dispersion stability:	not determined	
Vapour pressure:	not determined	
Vapour pressure:	not determined	
Density:	1,00 g/cm³	ASTM D 1296
Relative density:	not determined	
Bulk density:	not determined	
Relative vapour density:	not determined	
Particle characteristics:	not determined	

9.2. Other information

Information with regard to physical hazard classes

Explosive properties

The product is not: Explosive.

Self-ignition temperature

Solid:	not applicable
Gas:	not applicable

Oxidizing properties

The product is not: oxidising.

Other safety characteristics

Evaporation rate:	not determined
Solvent separation test:	not determined
Solvent content:	not determined
Solid content:	not determined
Sublimation point:	not determined
Softening point:	not determined
Pour point:	not determined
	not determined
Viscosity / dynamic:	not determined
Flow time:	not determined

SECTION 10: Stability and reactivity

10.1. Reactivity

No known hazardous reactions.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

No known hazardous reactions.

10.4. Conditions to avoid

No known hazardous reactions.

10.5. Incompatible materials

No known hazardous reactions.

10.6. Hazardous decomposition products

No known hazardous reactions.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in GB CLP Regulation

ATEmix calculated

ATE (oral) > 2000 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) > 20 mg/l; ATE (inhalation dust/mist) > 5 mg/l

Acute toxicity

CAS No	Chemical name					
	Exposure route	Dose		Species	Source	Method
57-55-6	1,2-Propanediol					
	oral	LD50 mg/kg	22000	Rat		
	dermal	LD50 mg/kg	>2000	Albino rabbit		
	inhalation (1 h) vapour	LC50 mg/l	317042	Rabbit		
95-14-7	Benzotriazole					
	oral	LD50 mg/kg	560	Ratte	Gestis	
3302-10-1	3,5,5-Trimethylhexansäure					
	oral	LD50 mg/kg	1160	Rat		
	dermal	LD50 mg/kg	>2000	Rat		
39464-70-5	Phenylpolyglykolphosphorsäureester					
	oral	LD50 mg/kg	>2000	Rat		OECD 423
1310-58-3	potassium hydroxide; caustic potash					
	oral	LD50 mg/kg	273	Rat	RTECS	

Additional information on tests

The mixture is classified as not hazardous according to regulation (EC) No 1272/2008 [CLP].

SECTION 12: Ecological information

12.1. Toxicity

There are no data available on the mixture itself.

CAS No	Chemical name						
	Aquatic toxicity	Dose		[h] | [d]	Species	Source	Method
57-55-6	1,2-Propanediol						
	Acute fish toxicity	LC50 mg/l	40613	96 h	Scophthalmus maximus		
	Acute algae toxicity	ErC50 mg/l	19000	96 h	Pseudokirchnerella subcapitata		
	Acute crustacea toxicity	EC50 mg/l	18340	48 h	Ceriodaphnia dubia		
	Crustacea toxicity	NOEC mg/l	13020	7 d			
95-14-7	Benzotriazole						
	Acute fish toxicity	LC50	180 mg/l	96 h			
	Acute algae toxicity	ErC50	75 mg/l				
	Acute crustacea toxicity	EC50	55 mg/l	48 h			
	Algae toxicity	NOEC mg/l	1,18				
3302-10-1	3,5,5-Trimethylhexansäure						
	Acute fish toxicity	LC50	122 mg/l	96 h			
	Acute algae toxicity	ErC50	81 mg/l	72 h			
	Acute crustacea toxicity	EC50	68 mg/l	48 h			
	Algae toxicity	NOEC	10 mg/l				
39464-70-5	Phenylpolyglykolphosphorsäureester						
	Acute algae toxicity	ErC50 mg/l	>100	72 h			
	Acute crustacea toxicity	EC50 mg/l	>100	48 h			
	Algae toxicity	NOEC mg/l	>100	3 d			
	Crustacea toxicity	NOEC	100 mg/l	2 d			
1310-58-3	potassium hydroxide; caustic potash						
	Acute fish toxicity	LC50	80 mg/l	96 h	Gambusia affinis	IUCLID	

12.2. Persistence and degradability

There are no data available on the mixture itself.

CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
57-55-6	1,2-Propanediol			
	OECD 306	96%	64	
3302-10-1	3,5,5-Trimethylhexansäure			
	OECD 301A	96%	21	
	Readily biodegradable (according to OECD criteria).			
39464-70-5	Phenylpolyglykolphosphorsäureester			
	OECD 301D	5%	28	
	Not readily biodegradable (according to OECD criteria)			

12.3. Bioaccumulative potential

There are no data available on the mixture itself.

BCF

CAS No	Chemical name	BCF	Species	Source
57-55-6	1,2-Propanediol	0,09	aquatic	
95-14-7	Benzotriazole	4,147		

12.4. Mobility in soil

There are no data available on the mixture itself.

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to UK REACH.
There are no data available on the mixture itself.

12.6. Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

12.7. Other adverse effects

There are no data available on the mixture itself.

Further information

Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation.

Contaminated packaging

Wash with plenty of water. Completely emptied packages can be recycled.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number or ID number:	No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name:	No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es):	No dangerous good in sense of this transport regulation.
14.4. Packing group:	No dangerous good in sense of this transport regulation.

Inland waterways transport (ADN)

14.1. UN number or ID number:	No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name:	No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es):	No dangerous good in sense of this transport regulation.
14.4. Packing group:	No dangerous good in sense of this transport regulation.

Marine transport (IMDG)

14.1. UN number or ID number:	No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name:	No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es):	No dangerous good in sense of this transport regulation.
14.4. Packing group:	No dangerous good in sense of this transport regulation.
Segregation group:	bromates

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number:	No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name:	No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es):	No dangerous good in sense of this transport regulation.
14.4. Packing group:	No dangerous good in sense of this transport regulation.

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

No dangerous good in sense of this transport regulation.

14.7. Maritime transport in bulk according to IMO instruments

No dangerous good in sense of this transport regulation.

SECTION 15: Regulatory information

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

EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 75

Information according to Directive 2012/18/EU (SEVESO III):	Not subject to 2012/18/EU (SEVESO III)

National regulatory information

Water hazard class (D):	1 - slightly hazardous to water

15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

Abbreviations and acronyms

Acute Tox: Acute toxicity
Skin Corr: Skin corrosion
Skin Irrit: Skin irritation
Eye Dam: Eye damage
Eye Irrit: Eye irritation
Aquatic Chronic: Chronic aquatic hazard
CLP: Classification, labelling and Packaging
REACH: Registration, Evaluation and Authorization of Chemicals
GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals
UN: United Nations
CAS: Chemical Abstracts Service
DNEL: Derived No Effect Level
DMEL: Derived Minimal Effect Level
PNEC: Predicted No Effect Concentration
ATE: Acute toxicity estimate
LC50: Lethal concentration, 50%
LD50: Lethal dose, 50%
LL50: Lethal loading, 50%
EL50: Effect loading, 50%
EC50: Effective Concentration 50%
ErC50: Effective Concentration 50%, growth rate
NOEC: No Observed Effect Concentration
BCF: Bio-concentration factor
PBT: persistent, bioaccumulative, toxic
vPvB: very persistent, very bioaccumulative
ADR: Accord européen sur le transport des marchandises dangereuses par Route
(European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Regulations concerning the international carriage of dangerous goods by rail
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
(Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures)
IMDG: International Maritime Code for Dangerous Goods
EmS: Emergency Schedules
MFAG: Medical First Aid Guide
IATA: International Air Transport Association
ICAO: International Civil Aviation Organization
MARPOL: International Convention for the Prevention of Marine Pollution from Ships
IBC: Intermediate Bulk Container
SVHC: Substance of Very High Concern
For abbreviations and acronyms, see table at http://abbrev.esdscom.eu

Relevant H and EUH statements (number and full text)

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H411	Toxic to aquatic life with long lasting effects.

Further Information

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations. The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the

product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

(The data for the relevant ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)