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

1.1. Product identifier

VA-013 Ready Mix -20°C

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

Use of the substance/mixture

engine coolant

Uses advised against

No information available.

1.3. Details of the supplier of the safety data sheet

Company name:	Vierol AG	
Street:	Karlstrasse 19	
Place:	D-26123 Oldenburg	
Telephone:	+49 (0) 441 – 210 20 – 0	Telefax: +49 (0) 441 – 210 20 –111
e-mail:	info@vierol.de	
Internet:	www.vierol.de	

1.4. Emergency telephone number:

Giftinformationszentrum Nord (Göttingen)
+49 (0)551/19240

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GB CLP Regulation

Acute Tox. 4; H302
Skin Irrit. 2; H315
Eye Irrit. 2; H319
STOT RE 2; H373

Full text of hazard statements: see SECTION 16.

2.2. Label elements

GB CLP Regulation

Hazard components for labelling

Ethane-1,2-diol
Potassium 3,5,5-trimethylhexanoate

Signal word: Warning

Pictograms:

Hazard statements

H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H373	May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if

present and easy to do. Continue rinsing.

P337+P313 If eye irritation persists: Get medical advice/attention.

P501 Dispose of contents / container in accordance with official regulations.

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	GHS Classification			
107-21-1	Ethane-1,2-diol			30 - < 35 %
	203-473-3	603-027-00-1	01-2119456816-28	
	Acute Tox. 4, STOT RE 2; H302 H373			
93918-10-6	Potassium 3,5,5-trimethylhexanoate			1 - < 5 %
	299-890-3			
	Acute Tox. 4, Skin Corr. 1, Eye Dam. 1; H302 H314 H318			

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		
107-21-1	203-473-3	Ethane-1,2-diol	30 - < 35 %
	dermal: LD50 = > 3500 mg/kg; oral: LD50 = 7712 mg/kg		
93918-10-6	299-890-3	Potassium 3,5,5-trimethylhexanoate	1 - < 5 %
	oral: LD50 = >= 1160 mg/kg		

Further Information

This mixture contains no substances of very high concern (SVHC) which are included in the Candidate List according to Article 59 of REACH.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Take off contaminated clothing and wash it before reuse.

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

After inhalation

Remove person to fresh air and keep comfortable for breathing.

In all cases of doubt, or when symptoms persist, seek medical advice.

After contact with skin

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

In case of skin irritation, consult a physician.

After contact with eyes

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

Remove contact lenses, if present and easy to do. Continue rinsing.

After ingestion

Rinse mouth thoroughly with water.

Let water be drunken in little sips (dilution effect).
Do NOT induce vomiting.
When in doubt or if symptoms are observed, get medical advice.

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

May cause respiratory irritation. The following symptoms may occur: Cough, Dizziness, Headache
May be absorbed through the skin. Repeated exposure may cause skin dryness or cracking.
Causes serious eye irritation. The following symptoms may occur: erythema (redness)
Harmful if swallowed. The following symptoms may occur: Vomiting, Unconsciousness, Nausea

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Use water spray jet to protect personnel and to cool endangered containers.
Co-ordinate fire-fighting measures to the fire surroundings.

- alcohol resistant foam
- Extinguishing powder
- Carbon dioxide (CO2)
- Water mist

Unsuitable extinguishing media

Full water jet

5.2. Special hazards arising from the substance or mixture

Non-flammable. Formation of toxic gases is possible during heating or in case of fire.
In case of fire may be liberated:

- Carbon monoxide (CO)
- Carbon dioxide (CO2).
- Pyrolysis products, toxic

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus.
Suppress gases/vapours/mists with water spray jet.

Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.
Dispose of waste according to applicable legislation.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General advice

Do not breathe gas/fumes/vapour/spray.
Avoid contact with skin, eyes and clothes.
Use personal protection equipment.

6.2. Environmental precautions

Do not allow to enter into surface water or drains.
Do not allow to enter into soil/subsoil.

6.3. Methods and material for containment and cleaning up

For containment

Stop leak if safe to do so.
Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

For cleaning up

Collect in closed and suitable containers for disposal.
Treat the recovered material as prescribed in the section on waste disposal.
Clean contaminated articles and floor according to the environmental legislation.

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

Always close containers tightly after the removal of product.
Do not put any product-impregnated cleaning rags into your trouser pockets.
Clear spills immediately.
Use only in well-ventilated areas.

Advice on protection against fire and explosion

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 and in a well-ventilated place.
Keep only in the original container. Store in a cool dry place.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Hints on joint storage

Do not store together with:
- Materials capable of ignition under almost all normal temperature conditions
- Explosives

7.3. Specific end use(s)

engine coolant

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m³	fibres/ml	Category	Origin
107-21-1	Ethane-1,2-diol, vapour	20	52		TWA (8 h)	WEL
		40	104		STEL (15 min)	WEL

DNEL/DMEL values

CAS No	Substance		
DNEL type	Exposure route	Effect	Value
107-21-1	Ethane-1,2-diol		
Worker DNEL, long-term	inhalation	local	35 mg/m³
Worker DNEL, long-term	dermal	systemic	106 mg/kg bw/day
Consumer DNEL, long-term	inhalation	local	7 mg/m³
Consumer DNEL, long-term	dermal	systemic	53 mg/kg bw/day

PNEC values

CAS No	Substance	
Environmental compartment		Value
107-21-1	Ethane-1,2-diol	
Freshwater		10 mg/l
Freshwater (intermittent releases)		10 mg/l
Marine water		1 mg/l
Freshwater sediment		37 mg/kg
Marine sediment		3,7 mg/kg
Micro-organisms in sewage treatment plants (STP)		199,5 mg/l
Soil		1,53 mg/kg

8.2. Exposure controls

Appropriate engineering controls

Provide adequate ventilation as well as local exhaustion at critical locations.

Protective and hygiene measures

Take off contaminated clothing and wash it before reuse.
Wash hands and face before breaks and after work and take a shower if necessary.
When using do not eat, drink, smoke, sniff. Keep away from food, drink and animal feedingstuffs.

Eye/face protection

During filling, metering, mixing and sampling must be used:
Wear eye/face protection. EN 166

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.
Recommended glove articles: EN ISO 374
Suitable material: NBR (Nitrile rubber)
Thickness of the glove material: 0,4 mm
Breakthrough times and swelling properties of the material must be taken into consideration. Breakthrough time: > 8h
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

Wear suitable protective clothing. EN 14605

Respiratory protection

In case of inadequate ventilation wear respiratory protection.
- Half-face mask (EN 140)
- Filter type: A/P (EN 141)

The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used. (EN 137)

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Colour:	violet
Odour:	characteristic
Odour threshold:	not determined

		Test method
pH-Value (at 20 °C):	7,5 - 9,0	
Changes in the physical state		
Melting point/freezing point:	< -20 °C	ASTM D 1177
Boiling point or initial boiling point and boiling range:	not determined	
Flash point:	not determined	
Flammability		
Solid/liquid:	not applicable not applicable	
Explosive properties		
The product is not: Explosive.		
Lower explosion limits:	not determined	
Upper explosion limits:	not determined	
Self-ignition temperature		
Solid:	not applicable	
Gas:	not applicable	
Decomposition temperature:	not determined	
Oxidizing properties		
The product is not: oxidising.		
Vapour pressure:	not determined	
Density (at 20 °C):	1,044 g/cm³	
Water solubility:	easily soluble	
Solubility in other solvents		
not determined		
Partition coefficient n-octanol/water:	not determined	
Viscosity / dynamic:	not determined	
Viscosity / kinematic:	not determined	
Relative vapour density:	not determined	
Evaporation rate:	not determined	

9.2. Other information

Solid content:	not determined

SECTION 10: Stability and reactivity

10.1. Reactivity

No hazardous reaction when handled and stored according to provisions.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Reacts with : Oxidizing agent, Acids

10.4. Conditions to avoid

Avoid: Thermal decomposition

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.

Safe handling: see section 7

10.5. Incompatible materials

Materials to avoid:

- Oxidising agent
- Strong acid, alkalines

10.6. Hazardous decomposition products

Hazardous combustion products:

- Carbon monoxide (CO)
- Carbon dioxide (CO2).
- Pyrolysis products, toxic

SECTION 11: Toxicological information

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

Acute toxicity

Harmful if swallowed.

ATEmix calculated

ATE (oral) 1406,7 mg/kg

CAS No	Chemical name					
	Exposure route	Dose		Species	Source	Method
107-21-1	Ethane-1,2-diol					
	oral	LD50 mg/kg	7712	Rat	Study report (1968)	according to BASF-internal standards
	dermal	LD50 mg/kg	> 3500	Mouse	Fundamental and Applied Toxicology 27: 1	LD50 derived from developmental toxicity
93918-10-6	Potassium 3,5,5-trimethylhexanoate					
	oral	LD50 mg/kg	>= 1160	Rat	Study report (1986)	OECD Guideline 401

Irritation and corrosivity

Causes skin irritation.

Causes serious eye irritation.

Sensitising effects

Based on available data, the classification criteria are not met.

Carcinogenic/mutagenic/toxic effects for reproduction

Based on available data, the classification criteria are not met.

STOT-single exposure

Based on available data, the classification criteria are not met.

STOT-repeated exposure

May cause damage to organs through prolonged or repeated exposure. (Ethane-1,2-diol)

Aspiration hazard

Based on available data, the classification criteria are not met.

Additional information on tests

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

11.2. Information on other hazards

Endocrine disrupting properties

No information available.

SECTION 12: Ecological information

12.1. Toxicity

The product is not: Ecotoxic.

CAS No	Chemical name						
	Aquatic toxicity	Dose		[h] | [d]	Species	Source	Method
107-21-1	Ethane-1,2-diol						
	Acute fish toxicity	LC50	> 72860 mg/l	96 h	Pimephales promelas	Environ. Toxicology and Chemistry, Vol.	EPA 600/4-90/027. U.S. Environmental Pro
	Acute algae toxicity	ErC50	6500 - 13000 mg/l	96 h	Pseudokirchneriella subcapitata	Study report (1982)	other: EPA 600/9-78-018, 1978
	Acute crustacea toxicity	EC50	> 100 mg/l	48 h	Daphnia magna	Study report (1998)	OECD Guideline 202
	Fish toxicity	NOEC	15380 mg/l	7 d	Pimephales promelas	Environ. Toxicology and Chemistry, Vol.	other: EPA 600/4-89/001. U.S. Environmen
	Algae toxicity	NOEC	> 100 mg/l	8 d	Scenedesmus quadricauda	REACh Registration Dossier	OECD Guideline 201
	Crustacea toxicity	NOEC	7500 - 15000 mg/l	21 d	Daphnia magna	REACh Registration Dossier	other: ASTM
93918-10-6	Potassium 3,5,5-trimethylhexanoate						
	Acute algae toxicity	ErC50	189,87 mg/l	72 h	Raphidocelis subcapitata	REACh Registration Dossier	OECD Guideline 201

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
107-21-1	Ethane-1,2-diol	-1,36
93918-10-6	Potassium 3,5,5-trimethylhexanoate	-0,47

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to UK REACH.

The product has not been tested.

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

No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

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

Contaminated packaging

This material and its container must be disposed of as hazardous waste. Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN 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:	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:	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.

Air transport (ICAO-TI/IATA-DGR)

14.1. UN 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 3

2004/42/EC (VOC):	33,445 % (349,166 g/l)
Information according to 2012/18/EU (SEVESO III):	Not subject to 2012/18/EU (SEVESO III)

National regulatory information

Employment restrictions:	Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).
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

Changes

This data sheet contains changes from the previous version in section(s): 2,7,8,9,10,11,12,13.

Abbreviations and acronyms

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 Harmonized 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
LC50: Lethal concentration, 50%
LD50: Lethal dose, 50%
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
DNEL: Derived No Effect Level
DMEL: Derived Minimal Effect Level
PNEC: Predicted No Effect Concentration
ATE: Acute toxicity estimate
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
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)
EmS: Emergency Schedules
MFAG: Medical First Aid Guide
ICAO: International Civil Aviation Organization
MARPOL: International Convention for the Prevention of Marine Pollution from Ships
IBC: Intermediate Bulk Container
VOC: Volatile Organic Compounds
SVHC: Substance of Very High Concern
For abbreviations and acronyms, see table at http://abbrev.esdscom.eu

Classification for mixtures and used evaluation method according to GB CLP Regulation

Classification	Classification procedure
Acute Tox. 4; H302	Calculation method
Skin Irrit. 2; H315	Calculation method
Eye Irrit. 2; H319	Calculation method
STOT RE 2; H373	Calculation method

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.
H373	May cause damage to organs through prolonged or repeated exposure.

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