

according to Regulation (EG) No. 1907/2006

1. IDENTIFICATION OF THE MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade Name:

VAICO VA-012 Plus

VAICO No.:

V60-0019, V60-0070, V60-0034, V60-0095, V60-0087

1.2. Informing department

VIEROL AG | Karlstraße 19 | 26123 Oldenburg | Germany

Telefon +49 441 - 210 20-0 | Telefax +49 441 - 210 20-111

1.3. Emergency telephone number

Notrufnummer: 0049 (0)551/ 19240 – Gift-Informationszentrum Nord (Göttingen)

2. COMPOSITION / INFORMATION OF COMPONENTS

2.1. Chemical characterization:

Ethylenglykol with inhibitors

2.2. Hazardous components:

CAS: 107-21-1 Ethandiol

appr. 95 %

EINECS: 203-473-3 Xn; R 22

3. POSSIBLE HAZARDS

3.1. Hazards description:

Xn: Harmful

3.2. Warnings for people and environment:

R 22: Harmful when swallowed.

4. FIRST-AID-MEASURES

4.1. General information

Take person concerned away from danger zone and lay him down. When breath is not regular or in case of respiratory standstill, artificial respiration. Remove clothes immediately that are polluted with the product. Symptoms of poisoning may appear after several hours only, therefore medical care for 48 hours at least after an accident is needed.

4.2. Inhalation

Supply of fresh air or oxygen; call on medical care. In case of unconsciousness, positioning and transport on one's side.

4.3. Skin contact

Wash off with water and soap immediately and rinse intensively.

4.4. Eye contact

Rinse eyes several minutes with opened palpebral fissure under running water and call on medical assistance.

4.5. If swallowed

Wash out mouth and drink plenty of water. Take medical carbon. Do not induce vomiting, call on medical assistance immediately.

4.6. Instructions for the physician

In case of poisoning, administer ethanol intravenously (if available 4-methylpyrazol). You should keep up a concentration of ethanol of 100 – 200 mg per 100 ml blood. Simultaneously, one will have to carry out a diuretic therapy.

4.7. The following symptoms may appear

Vertigo
Nausea
Unconsciousness

4.8. Dangers

Danger of circulatory failure.

5. MEASURES FOR FIRE FIGHTING

5.1. Suitable Fire fighting means

CO₂, quick-lime or jet of water. Fight a larger blaze with water spray or alcohol-resistant foam.

5.2. Unsuitable fire fighting means

Water in full jet

5.3. Particular danger by material, its combustions or developing gases

Fumes can reach a source of ignition and cause a return of flames.

5.4. Special protective equipment

Wear breathing apparatus

5.5. Further information

Collect contaminated extinguishing water separately, it must not get into the canalisation. Cool the endangered receptacle with water spray.

6. HANDLING AND STORAGE

6.1. Precaution measures for persons

Wear protective equipment. Keep away unprotected persons. Care for sufficient airing. Keep away sources of ignition. Avoid eye and skin contact. Do not breathe in fumes/aerosols.

6.2. Measures for environmental care

Do not let it get into the canalisation or in other waters. Inform responsible offices in case of seep into waters or canalisation.

6.3. Cleaning methods

Take it with liquid-binding material (sand, silica, bonding agent).
Care for sufficient airing.
Dispose of contaminated material as described in point 13.

7. EXPOSURE CONTROLS / PERSONAL PROTECTION

7.1. Handling:

Instructions for a secured dealing
Keep receptacles firmly closed.
Care for a good airing/ventilation at the working place.
Care also for a good interior floor ventilation (fumes are heavier than air).

7.2. Protective instructions against fire and explosion

Keep away sources of ignition – do not smoke. Fumes with air can form an explosive mixture.

7.3. Storage**Demands on warehouses and receptacles**

Store it in a cool place. Care for a thinner-resistant and firm floor.

7.4. Instructions for accumulated storage

Keep it away from oxidation agents.

7.5. Further information on storage conditions

Keep receptacles firmly closed. Keep receptacles in a well aired place. Protection against heat and direct sunlight. Keep in a cool place. Heating leads to an increase of pressure and burst danger. Protect from humidity and water. Product is hygroscopic.

8. PHYSICAL AND CHEMICAL PROPERTIES

8.1. Additional instructions for equipment of technical plants

No further instructions, see point 7.

8.2. Limits for components that are to control

107-21-1 Ethandiol (100,0 %)

MAK 26 mg/m³, 10 ml/m³

Danger of skin absorption, pregnancy group C

Additional instructions: Instructions are based on valid lists during issuing these datas.

8.3. Personal protective equipment General protective and hygienic measures

Take of dirty and soaked clothes immediately. Do not breathe in gases, fumes, aerosols. Avoid eye and skin contact. Keep away from food, drinks and feed.

8.4. Breathing apparatus

Wear a breathing apparatus, while insufficient ventilation. Filtration for a short time: Filter A2

8.5. Hand protection

gloves/resistant against thinner agents

gloves material: for example:

PVC 0,5 mm

Nitril rubber/nitril latex 0,35 mm

Butyl rubber 0,5 mm

Fluorine rubber-FKM 0,4 mm

Time to seep through the material of gloves: bursting time $\geq$ 8 hours

8.6. Eye protection

airtight protection glasses

8.7. Body protection

protective working clothes

9. PHYSICAL AND CHEMICAL FEATURES

9.1. Information on basic physical and chemical properties

Form:	liquid
Colour:	colourless
Smell	seetish
Melting point	-12,4° C
Boiling point	194 – 205° C
Flash point	111° C
Ignition temperature	410° C
Explosion danger	There is no explosive danger of this product, however a development of explosive fume/air mixture is possible
Limits of explosion:	
the lowest	3,2 Vol %
the highest	15,3 Vol %
Steam pressure at 20° C	< 0,1 mbar
Density at 20°	C 1,11 g/cm ³
Solubility in / Mixable	
with water at 20° C	1000 g/l
pH-value (100 g/l) at 20° C	6 – 7,5
Viscosity:	
Dynamic at 20° C	21 mPas

10. TOXICOLOGICAL INFORMATION

10.1. Thermal decomposition/avoidable conditions Decomposition starts at:
200 – 205° C

10.2. Dangerous reactions
Reactions with strong oxidation agents

10.3. Dangerous composition products
No dangerous decomposition products known.

11. INSTRUCCIONS TO TOXICOLOGY

11.1. ACUTE – classification relevant LD/LC50-values

107-21-1 Ethandiol

Oral	LD50 4000 mg/kg (rat)
Dermal	LD50 > 2000 mg/kg (rabbit)

11.2. Skin contact:
no irritations.

11.3. Eye contact:
poor irritations.

11.4. On respiratory organs:
poor irritations.

11.5. Sensitivity:
no sensitive effect known.

11.6. Experiences concerning human being
The taking of a large amount may cause poisoning, possibly fatal. Repeated takings lead to kidney trouble because of development of oxidized acid crystals.

11.7. Additional toxicological instructions
Danger by skin absorption.

12. DISPOSAL CONSIDERATIONS

12.1. Indication for elimination (persistence and degradability):

Further instructions

The product is easily biodegradable.

BOD 5 (20° C), APHA method: 36 % of ThOD (not adapted)

BOD 5 (20° C), APHA method: 63 % of ThOD (adapted)

BOD 20 (20° C), APHA method: 100 % of ThOD

12.2. Behaviour within environmental compartments:

12.2.1. Mobility and potential of bioaccumulation: small bioaccumulation

Eco toxic effects:

aquatic toxicity:

Kind of test	test parameter	evaluation
trout	> 18.500 mg/l	LC50 (96h)
gold fish	> 5.000 mg/l	LC50 (24h)
water flea	> 10.000 mg/l	EC50 (24h)

12.3. Remarks

The product is practically not poisonous against water living beings.

12.4. Further instructions

Chemical oxygen requirement: 1,245 mg/g

12.5. General instructions

Rating 1 regarding water endangering (self-rating): weakly endangered

So not let it get into ground water, waters or canalisation.

It must not get undiluted, i.e. not neutralised into sewage.

13. DISPOSAL INSTRUCTIONS

13.1. Product:

13.1.1. Recommendation

It must not be disposed of together with household waste. Do not let it get into the canalisation. It must be supplied with a special treatment according to official regulations. Address producer for recycling.

13.1.2. Waste code number

Assign the waste code numbers according to the waste decree, specified for industrial sector and progress.

13.2. Not cleaned receptacles:

13.2.1. Recommendation

Contaminated receptacles must be emptied thoroughly, after appropriate cleaning they can be supplied with recycling. Not cleanable receptacles are to dispose of as the product itself.

13.2.2. Recommended cleaning agent

Water, eventually in addition with cleaning agents.

14. TRANSPORT RULES

14.1. Transport rules

As defined by transportation rules, no hazardous freight.

15. RULES

- 15.1. Marking as defined by EC rules:**
Appropriate to the EC rules, the product is classified and marked as freight V.
- 15.2. Code letter and hazard description of the product:**
Xn Harmful
- 15.3. R-clauses:**
22 Harmful if swallowed.
- 15.4. S-clauses:**
24/25 Avoid eye and skin contact.
46 If swallowed, call on medical care immediately and show packing or label.
- 15.5. National regulations:**
1: weakly endangered

16. FURTHER INSTRUCTIONS

- 16.1. Further instructions**
All instructions are based on present knowledge, but they give no assurance of product features and do not found a legal relationship agreed upon.

Major changes with the previous version are marked with * on left margin.
The product is meant for commercial treatment and use only.
- 16.2. Wording of R-clauses under section 2 and 3:**
R 22 harmful if swallowed
- 16.3. Wording of S-clauses under section 2 and 3:**
22 harmful if swallowed
- 16.4. Data issuing section:**
Departement: Product management.