Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 11.01.2012 *Version number 1* *Revision: 11.01.2012*

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

· **1.1 Product identifier**

· **Trade name: Hesi pH+ Plus**

· **Article number:** HE51
· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
pH corrector for liquid nutrient solutions for plants. Only for use as a pH corrector.
· **Application of the substance / the preparation** Increases the pH in nutrient solutions for plants.

· **1.3 Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Hesi Plantenvoeding B.V.
Edisonstraat 11-17
6372 AK Landgraaf (NL)
tel: 0031- (0) 45 569 04 20
fax: 0031- (0) 45 569 04 21
e-mail: hesi@orange.nl
www.hesi.nl

· **Further information obtainable from:** Siglinde Winkler, e-mail: hesiglinde@orange.nl
· **1.4 Emergency telephone number:** National Poisons Information Service (NPIS): 0870 600 6266 (UK only)

2 Hazards identification

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


GHS05 corrosion

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


GHS07

Acute Tox. 4 H302 Harmful if swallowed.

· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**


C; Corrosive

R35: Causes severe burns.


Xn; Harmful

R22: Harmful if swallowed.
· **Information concerning particular hazards for human and environment:**
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.
· **Classification system:**
The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

· **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**


GHS05 GHS07

· **Signal word** Danger

(Contd. on page 2)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 11.01.2012 *Version number 1* *Revision: 11.01.2012*

Trade name: Hesi pH+ Plus

(Contd. of page 1)

· ***Hazard-determining components of labelling:***
potassium hydroxide
· ***Hazard statements***
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
· ***Precautionary statements***

P260	*Do not breathe dust/fume/gas/mist/vapours/spray.*
P280	*Wear protective gloves/protective clothing/eye protection/face protection.*
P303+P361+P353	*IF ON SKIN (or hair): Remove/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.*
P310	*Immediately call a POISON CENTER or doctor/physician.*
P304+P340	*IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.*
P301+P312	*IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.*
P321	*Specific treatment (see on this label).*
P405	*Store locked up.*
P501	*Dispose of contents/container in accordance with local/regional/national/international regulations.*

· ***2.3 Other hazards***
· ***Results of PBT and vPvB assessment***
· ***PBT:***
Does not meet the specific criteria detailed in Annex XII of Regulation 1907/2006 and the substances is not considered as a PBT.
· ***vPvB:***
Does not meet the specific criteria detailed in Annex XII of Regulation 1907/2006 and the substances is not considered as a vPvB.

*
3 Composition/information on ingredients

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

· ***Dangerous components:***

CAS: 1310-58-3 *EINECS: 215-181-3*	*potassium hydroxide* *C R35; Xn R22* *Skin Corr. 1A, H314; Acute Tox. 4, H302*	*40 - 60%*

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

4 First aid measures

· ***4.1 Description of first aid measures***
· ***General information:***
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
· ***After inhalation:***
In case of unconsciousness place patient stably in side position for transportation.
Take affected persons into fresh air and keep quiet.
Seek medical treatment.
· ***After skin contact:***
Remove contaminated clothing and shoes.
Immediately wash with water and soap and rinse thoroughly.
Seek medical treatment.
· ***After eye contact:***
Rinse opened eye for several minutes under running water. Then consult a doctor.
Seek immediate medical advice.

(Contd. on page 3)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 11.01.2012 *Version number 1* *Revision: 11.01.2012*

Trade name: Hesi pH+ Plus

(Contd. of page 2)

· ***After swallowing:***
Call for a doctor immediately.
Drink plenty of water and provide fresh air. Call for a doctor immediately.
· ***4.2 Most important symptoms and effects, both acute and delayed***
The material is extremely destructive to mucous membranes and upper respiratory tract, eyes and skin.
· ***4.3 Indication of any immediate medical attention and special treatment needed***
No further relevant information available.

5 Firefighting measures

· ***5.1 Extinguishing media***
· ***Suitable extinguishing agents:***
CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· ***For safety reasons unsuitable extinguishing agents:*** *Water with full jet*
· ***5.2 Special hazards arising from the substance or mixture***
Formation of toxic gases is possible during heating or in case of fire.
· ***5.3 Advice for firefighters***
· ***Protective equipment:*** *Standard protective clothing for firefighters.*

6 Accidental release measures

· ***6.1 Personal precautions, protective equipment and emergency procedures***
Wear protective equipment. Keep unprotected persons away.
Do not breathe fumes.
· ***6.2 Environmental precautions:*** *Do not allow to enter sewers/ surface or ground water.*
· ***6.3 Methods and material for containment and cleaning up:***
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
· ***6.4 Reference to other sections***
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· ***7.1 Precautions for safe handling***
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
· ***Information about fire - and explosion protection:*** *No special measures required.*

· ***7.2 Conditions for safe storage, including any incompatibilities***
· ***Storage:***
· ***Requirements to be met by storerooms and receptacles:***
Store in a cool, dry, well ventilated place.
Store only in the original receptacle.
Comply to national regulations.
· ***Information about storage in one common storage facility:*** *Do not store together with acids.*
· ***Further information about storage conditions:*** *Keep container tightly sealed.*
· ***7.3 Specific end use(s)*** *No further relevant information available.*

8 Exposure controls/personal protection

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

(Contd. on page 4)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 11.01.2012 *Version number 1* *Revision: 11.01.2012*

Trade name: Hesi pH+ Plus

(Contd. of page 3)

· ***8.1 Control parameters***

· ***Ingredients with limit values that require monitoring at the workplace:***	
1310-58-3 potassium hydroxide	
WEL	Short-term value: 2 mg/m³

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

· ***8.2 Exposure controls***
· ***Personal protective equipment:***
· ***General protective and hygienic measures:***
Ensure good ventilation/exhaustion at the workplace.
Immediately remove all soiled and contaminated clothing
Keep away from foodstuffs, beverages and feed.
The usual precautionary measures are to be adhered to when handling chemicals.
Avoid contact with the skin.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
· ***Respiratory protection:***
Use of respiratory protection is recommended if the workplace limit is exceeded.
Self-contained respiratory protective device.
· ***Protection of hands:***

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
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.
Nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.1 mm
· ***Penetration time of glove material***
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
Value for the permeation: Level ≥ 6
· ***Eye protection:***

Tightly sealed goggles

· ***Body protection:*** *Alkaline resistant protective clothing*

9 Physical and chemical properties

· ***9.1 Information on basic physical and chemical properties***
· ***General Information***
· ***Appearance:***

Form:	*Liquid*
Colour:	*Colourless*
· ***Odour:***	*Odourless*
· ***Odour threshold:***	*Not determined.*

(Contd. on page 5)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 11.01.2012 Version number 1 Revision: 11.01.2012

Trade name: Hesi pH+ Plus

(Contd. of page 4)

· **pH-value at 20°C:**	13
· **Change in condition**	
Melting point/Melting range:	- 20°C
Boiling point/Boiling range:	> 150°C
· **Flash point:**	Not applicable.
· **Flammability (solid, gaseous):**	Not applicable.
· **Ignition temperature:**	
Decomposition temperature:	Not determined.
· **Self-igniting:**	Product is not self-igniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Explosion limits:**	
Lower:	Not determined.
Upper:	Not determined.
· **Vapour pressure:**	Not determined.
· **Density at 20°C:**	1.45 g/cm³
· **Relative density**	Not determined.
· **Vapour density**	Not determined.
· **Evaporation rate**	Not determined.
· **Solubility in / Miscibility with water:**	Fully miscible.
· **Segregation coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not determined.
Kinematic:	Not determined.
· **Solvent content:**	
Organic solvents:	0.0 %
Water:	50.0 %
· **9.2 Other information**	No further relevant information available.

10 Stability and reactivity

· **10.1 Reactivity**
· **10.2 Chemical stability**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **10.3 Possibility of hazardous reactions**
Strong exothermic reaction with acids.
Reacts with light alloys to form hydrogen.
· **10.4 Conditions to avoid** No further relevant information available.
· **10.5 Incompatible materials:** Contact with strong acids
· **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

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

· **LD/LC50 values relevant for classification:**		
1310-58-3 potassium hydroxide		
Oral	LD50	273 mg/kg (rat)

(Contd. on page 6)

Safety data sheet
according to 1907/2006/EC, Article 31

(Contd. of page 5)

· ***Primary irritant effect:***
· ***on the skin:*** *Strong caustic effect on skin and mucous membranes.*
· ***on the eye:*** *Strong caustic effect.*
· ***Respiratory tract:*** *Corrosive for the respiratory tract.*
· ***Sensitization:*** *No sensitizing effects known.*
· ***Additional toxicological information:***
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Harmful
Corrosive
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

12 Ecological information

· ***12.1 Toxicity***
· ***Aquatic toxicity:*** *No further relevant information available.*
· ***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:***
· ***General notes:***
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Must not reach sewage water or drainage ditch undiluted or unneutralized.
Rinse off of bigger amounts into drains or the aquatic environment may lead to increased pH-values. A high pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably reduced, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.
· ***12.5 Results of PBT and vPvB assessment***
· ***PBT:***
Does not meet the specific criteria detailed in Annex XII of Regulation 1907/2006 and the substances is not considered as a PBT.
· ***vPvB:***
Does not meet the specific criteria detailed in Annex XII of Regulation 1907/2006 and the substances is not considered as a vPvB.
· ***12.6 Other adverse effects*** *No further relevant information available.*

13 Disposal considerations

· ***13.1 Waste treatment methods***
· ***Recommendation***
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
After prior treatment product has to be landfilled or incinerated adhering to the regulations pertaining to the disposal of especially hazardous waste.

· ***Uncleaned packaging:***
· ***Recommendation:*** *Disposal must be made according to official regulations.*
· ***Recommended cleansing agents:*** *Water, if necessary together with cleansing agents.*

14 Transport information

· ***14.1 UN-Number***	
· ***ADR, IMDG, IATA***	*UN1814*
· ***14.2 UN proper shipping name***	
· ***ADR***	*1814 POTASSIUM HYDROXIDE SOLUTION*
· ***IMDG, IATA***	*POTASSIUM HYDROXIDE SOLUTION*

(Contd. on page 7)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 11.01.2012 *Version number 1* *Revision: 11.01.2012*

Trade name: Hesi pH+ Plus

(Contd. of page 6)

· ***14.3 Transport hazard class(es)***

· ***ADR***

· ***Class***	*8 Corrosive substances.*
· ***Label***	*8*

· ***IMDG, IATA***

· ***Class***	*8 Corrosive substances.*
· ***Label***	*8*
· ***14.4 Packing group***	
· ***ADR, IMDG, IATA***	*II*
· ***14.5 Environmental hazards:***	
· ***Marine pollutant:***	*No*
· ***14.6 Special precautions for user***	*Warning: Corrosive substances.*
· ***Danger code (Kemler):***	*80*
· ***EMS Number:***	*F-A,S-B*
· ***Segregation groups***	*Alkalis*
· ***14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code***	*Not applicable.*
· ***Transport/Additional information:***	
· ***ADR***	
· ***Tunnel restriction code***	*E*
· ***UN "Model Regulation":***	*UN1814, POTASSIUM HYDROXIDE SOLUTION, 8, II*

15 Regulatory information

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

16 Other information

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.

· ***Relevant phrases***
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.

R22 Harmful if swallowed.
R35 Causes severe burns.

· ***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)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
ICAO: International Civil Aviation Organization
GHS: Globally Harmonized System of Classification and Labelling of Chemicals

(Contd. on page 8)

Safety data sheet
according to 1907/2006/EC, Article 31

(Contd. of page 7)

LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent

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