



## Material Safety Data Sheet (MSDS)

### Hesi TNT Complex

Date of issue: 20-06-2017  
In accordance with: Commission Regulation (EU) No 453/2010  
Page: 1 of 7

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

##### *Identification of the substance or preparation:*

Catalogue No.: HE09 - HE13  
Product name: Hesi TNT Complex  
Identification of the product: Liquid NPK fertilizer enriched with micronutrients for all plants cultivated on soil and coco substrate. Only to be used as NPK fertilizer. (Text on label: Complete food for growing plants in soil and coco)

##### *Identification of the company:*

Hesi Plantenvoeding B.V.  
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The Netherlands  
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Fax 0031 - (0) 45 569 04 21  
E-mail: [info@hesi.nl](mailto:info@hesi.nl)  
Website: [www.hesi.nl](http://www.hesi.nl)

Contact Hesi: Mr. Henk Ijpelaar, e-mail: [sales@hesi.nl](mailto:sales@hesi.nl)

Responsible for the MSDS: Mrs. Siglinde Winkler, e-mail: [research@hesi.nl](mailto:research@hesi.nl)

Emergency telephone No.: Medical emergency number:  
Most of Europe, incl. UK: 112  
In the United Kingdom it can also be 999.  
USA & Canada: 911  
Australia: 000.  
National Poisons Information Service (UK) for the public:  
In England and Wales (NHS Direct) tel. 0845 4647.  
In Scotland (NHS 24) tel. 08454 242424  
Poisons Service, only for healthcare professionals:  
For the UK: NPIS tel. 0844 892 0111  
For Ireland: NPIC tel. (01) 809 2566

#### 2. Hazards identification.

Hesi TNT Complex is not subject to Directive 1999/45/EC and Directive 67/548/EEC, their amendments and their annexes.

Hazard symbol: None  
Classification: Not classified as hazardous.



## Material Safety Data Sheet (MSDS) Hesi TNT Complex

### 2. (Continued).

Emergency overview:	Wash hands after contact and before eating and drinking. Do not eat, drink or smoke, while working with the substance. Store in original container. Do not empty into groundwater.
Environmental risks:	In large amounts substance can cause eutrophication.
Potential health effects:	Potential mild diarrhea if taken internally in concentrated form. Content of nitrate can be harmful for babies (>6months) if swallowed (risk of cyanosis).
For more information about hazards, see section 4, 8 and 10-12.	

### 3. Composition/information on ingredients.

No hazardous components.

#### ***Ingredients:***

##### Macronutrients:

Ammonium nitrogen	0,02%
Nitrate nitrogen	0,03%
Total nitrogen	2,80%
P2O5 mineral acid soluble	2,20%
K2O mineral acid-soluble	3,10%
Magnesium (Mg)	0,15%
Calcium (Ca)	0,01%

##### Micronutrients:

Iron (Fe)*	45,0 mg/kg
Zinc (Zn)*	9,00 mg/kg
Manganese (Mn)*	11,0 mg/kg
Copper (Cu)*	5,00 mg/kg
Molybdenum (Mo)	8,14 mg/kg
Boron (B)	2,15 mg/kg

\* = EDTA chelated

##### Other Ingredients:

Vitamins (B1, B2, B3)  
Amino acids  
Inositol (sugar)

### 4. First aid measures.

After inhalation:	Usually not a problem. Remove to fresh air, if necessary.
After skin contact:	Wash off with soap and water. Remove contaminated clothing and shoes.
After eye contact:	Rinse eyes out with plenty of water for at least 15 minutes.



## Material Safety Data Sheet (MSDS) Hesi TNT Complex

### 4. (Continued).

After swallowing:	Drink water to dilute. Treat symptomatically in case of mild diarrhea. If swallowed by a baby (< 6months), contact a physician immediately, because of content of nitrate (risk of cyanosis). If swallowed by pets, contact a veterinarian immediately and show this Material Safety Data Sheet.
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### 5. Fire-fighting measures.

Suitable extinguishing media:	Water, dry chemicals, carbon dioxide and foam.
Unsuitable extinguishing media:	None
Special hazards:	None
Advice for fire-fighters:	Special protective equipment for fire fighting is necessary due to packaging (risk of burns and severe smoke): use self-contained breathing apparatus and protective clothing. Prevent fire-fighting water from entering surface water or groundwater.
Other information:	Hesi TNT Complex is not flammable and doesn't produce hazardous fumes. The original containers are made of PE (polyethylene) and can melt and drip in case of fire (risk of burns). PE is flammable (due to flammable gas in case of heating) and can cause (severe) smoke.



### 6. Accidental release measures.

Personal precautions:	Usually not necessary.
Environmental precautions:	Do not allow to enter sewerage or groundwater. Inform the water manager immediately in case of contamination of sewerage systems or surface water with large amounts of the substance (can cause eutrophication).
Procedures for cleaning / absorption:	Absorb with liquid-binding material and forward for disposal. Dispose contaminated material as waste according to section 13. Clean affected area after complete removal of substance.
For more information about precautions see sections 8 and 13 and see section 12 for more information about the environment.	

### 7. Handling and storage.

Handling:	Wash hands after contact and before eating and drinking. Do not eat, drink or smoke while working with substance. Do not empty into sewerage systems or groundwater. Keep in original container.
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## Material Safety Data Sheet (MSDS) Hesi TNT Complex

### 7. (Continued).

Storage:	Do not recast, but store tightly closed in original container (PE = polyethylene), between 5°C and 50°C. Avoid freezing. Do not contaminate water, food or feed by storage or disposal. Keep out of reach of children and pets. Protect the packaging against direct sunlight.
Specific end use(s):	Liquid NPK fertilizer enriched with micronutrients for all plants cultivated on soil and coco substrate. Dosage: for growing plants (indoors and outdoors) 50ml TNT Complex to 10 litres of water and for mother plants 25ml TNT Complex to 10 litres of water. Can be combined with other Hesi fertilizers, for example Root Complex, PowerZyme and SuperVit (and other Hesi products).

### 8. Exposure controls / personal protection.

<i>Control parameters:</i>	
Name:	Hesi TNT Complex
Exposure limit value:	No exposure limit values established, because it's not a hazardous substance.
<i>Personal protective equipment:</i>	
Appropriate engineering controls:	Not required.
Individual protection measures:	Do not eat, drink or smoke while working with the
Respiratory protection:	Not required.
Eye protection:	Not required.
Hand protection:	Gloves are not required, but are always advised while working with chemicals. Wash hands after contact and before eating and drinking.
Other protective equipment:	No special precautions necessary.
Industrial hygiene:	Wash hands after contact and before eating and drinking. Do not eat, drink or smoke while working with the substance. Do not empty into groundwater.

### 9. Physical and chemical properties.

Physical state:	Liquid
Colour:	Yellow
Odour:	Smells slightly like yeast (vitamin B1)
pH:	4,4 - 4,6
Melting point/freezing point:	> - 6°C
Boiling point:	> 105°C
Flash point:	Not flammable
Explosive limits	lower: No data available
	upper: No data available
Vapour pressure:	Below 1
Vapour density:	No data available



## Material Safety Data Sheet (MSDS) Hesi TNT Complex

### 9. (Continued).

Relative density:	1,0465 g/cm <sup>3</sup>
Solubility in water:	100%
Viscosity:	No data available

### 10. Stability and reactivity.

Chemical stability:	Stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Possibility of hazardous reactions:	None
Hazardous polymerisation:	Will not occur.
Conditions to avoid:	Heating, freezing and recasting (keep in original container).
Incompatible materials:	None
Hazardous reactions with:	None
Hazardous decomposition products:	None

### 11. Toxicological information.

Acute toxicity:	LD50 is not available / determined.
<i>The following assessment of the health hazards is based on an assessment of the various components of the product.</i>	
After inhalation:	Not usually a problem.
After skin contact:	Not usually a problem.
After eye contact:	Not usually a problem.
After swallowing:	Potential mild diarrhea if taken internally in concentrated form. Content of nitrate can be harmful for babies (>6months) if swallowed (risk of cyanosis).
Further data:	Hesi TNT Complex is not classified as a hazardous substance. Prolonged use or hypersensitivity may cause an irritation or sensitization, as with each substance may be the case. The chances of this happening are very slim.

### 12. Ecological information.

Ecotoxic effects:	Do not allow material to be released to the environment without proper governmental permits. In large quantities the substance can cause eutrophication in surface water. This may cause a severe reduction in water quality, enhanced growth of choking aquatic vegetation, a lack of oxygen in the water and a decrease of biodiversity. May be hazardous for drinking supplies.
Aquatic toxicity:	Can cause a lack of oxygen in water which can eventually cause fish mortality. No data available on direct toxicity to fish.
Persistence and degradability:	No data available on biodegradation.



## Material Safety Data Sheet (MSDS) Hesi TNT Complex

### 13. Disposal considerations.

Product:	Substance must be disposed of in compliance with the respective national regulations. Do not allow wastewater to be released into sewerage systems or surface water without the proper governmental permits.
Packaging:	The packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system. The original containers are made of PE (polyethylene).

### 14. Transport information.

Hesi TNT Complex is not classified as a hazardous substance. Therefore no special transport regulations are applicable. Any relevant local regulations concerning transport should be observed.  The transport regulations are cited according to international regulations and in the form applicable in the Netherlands. Possible national deviations in other countries are not considered.
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### 15. Regulatory information.

Labelling according to EC Directives:	
Hazard symbol:	None
Classification:	Not classified as hazardous.
R-phrases (risk statements):	None
S-phrases (safety statements):	S2 Keep out of reach of children. S20/21 When using do not eat, drink or smoke.
Labelling according to GHS (Globally Harmonised System of Classification and Labelling of Chemicals):	
H-phrases (hazard statements):	None
P-phrases (precautionary statements):	P102 Keep out of reach of children. P270 Do not eat, drink or smoke when using this product. P273 Avoid release to the environment.
Hesi TNT Complex is not classified as a hazardous substance.	

### 16. Other information.

#### *The complete text of the mentioned H and R-sentences in section 3:*

None

#### **History**

Previous version:	MSDS Hesi TNT Complex EN 13-06-2016
Adjustments:	Correction relative density in chapter 9



## Material Safety Data Sheet (MSDS) Hesi TNT Complex

### 16. (Continued).

The information contained herein is based on the present state of knowledge and experience. The MSDS describes the product with regard to the safety precautions. These data are no guarantee of product properties. It is the obligation of the user to use this product with care and to observe the applicable laws and regulations. Hesi Plantenvoeding B.V. disclaims any responsibility for loss or damage arising from use of these data.

MSDS in accordance with Regulation (EC) No.1907/2006 of the European Parliament and of the Council of 18 December 2006 on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

### Annex

At the time of preparation of this MSDS there have not yet been registered any safety reports for this mixture under Regulation (EC) No.1907/2006.