

Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

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

### 1.1. Product identifier

Hesse PU NANO-TOP DU 45544

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

#### Use of the substance/preparation

Surface treatment of wood and other materials

#### Identified Uses

	REACHSET 1000
SU3	Industrial uses: Uses of substances as such or in preparations at industrial sites
ERC4	Industrial use of processing aids in processes and products, not becoming part of articles
ERC5	Industrial use resulting in inclusion into or onto a matrix
PROC7	Industrial spraying
	REACHSET 2001
SU22	Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
ERC8a	Wide dispersive indoor use of processing aids in open systems
ERC8c	Wide dispersive indoor use resulting in inclusion into or onto a matrix
PROC11	Non industrial spraying

### 1.3. Details of the supplier of the safety data sheet

#### Manufacturer

Hesse GmbH & Co. KG  
 Warendorfer Strasse 21  
 59075 Hamm  
 Telephone no. +49 (0) 2381 963-00  
 Fax no. +49 (0) 2381 963-849  
 E-mail address ps@hesse-lignal.de

### 1.4. Emergency telephone number

Germany: +49 (0) 2381 788-612

## 2. Hazards identification

### 2.1. Classification of the substance or mixture

#### Classification (Regulation (EC) No. 1272/2008)

Classification (Regulation (EC) No. 1272/2008)

Flam. Liq. 2	H225
Eye Irrit. 2	H319
STOT SE 3	H336
Aquatic Chronic 3	H412

The product is classified and labelled in accordance with Regulation (EC) No 1272/2008  
 For explanation of abbreviations see section 16.

### 2.2. Label elements

Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

## Labelling according to regulation (EC) No 1272/2008

### Hazard pictograms



### Signal word

Danger

### Hazard statements

H225	Highly flammable liquid and vapour.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H412	Harmful to aquatic life with long lasting effects.

### Precautionary statements

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

### Hazardous component(s) to be indicated on label (Regulation (EC) No. 1272/2008)

contains butanone; ethyl acetate; isobutyl acetate; 2-methoxy-1-methylethyl acetate

### Supplemental information

EUH066 Repeated exposure may cause skin dryness or cracking.

## 2.3. Other hazards

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT). This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB) (if not listed in Section 3).

## 3. Composition/information on ingredients

### Hazardous ingredients

#### n-butyl acetate

CAS No.	123-86-4			
EINECS no.	204-658-1			
Registration no.	01-2119485493-29			
Concentration	>= 25	< 50		%
Classification (Regulation (EC) No. 1272/2008)	Flam. Liq. 3	H226		
	STOT SE 3	H336		Nervous system
		EUH066		

#### isobutyl acetate

CAS No.	110-19-0
EINECS no.	203-745-1

Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

Registration no. 01-2119488971-22  
 Concentration  $\geq$  20 < 25 %  
 Classification (Regulation (EC) No. 1272/2008)  
 Flam. Liq. 2 H225  
 STOT SE 3 H336  
 EUH066  
 Nervous system

**Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics**

EINECS no. 920-750-0  
 Registration no. 01-2119473851-33  
 Concentration  $\geq$  10 < 20 %  
 Classification (Regulation (EC) No. 1272/2008)  
 Flam. Liq. 2 H225  
 Asp. Tox. 1 H304  
 Aquatic Chronic 2 H411  
 STOT SE 3 H336  
 Nervous system

**2-methoxy-1-methylethyl acetate**

CAS No. 108-65-6  
 EINECS no. 203-603-9  
 Registration no. 01-2119475791-29  
 Concentration  $\geq$  1 < 10 %  
 Classification (Regulation (EC) No. 1272/2008)  
 Flam. Liq. 3 H226  
 STOT SE 3 H336

**4-methylpentan-2-one**

CAS No. 108-10-1  
 EINECS no. 203-550-1  
 Registration no. 01-2119473980-30  
 Concentration  $\geq$  1 < 10 %  
 Classification (Regulation (EC) No. 1272/2008)  
 Flam. Liq. 2 H225  
 Acute Tox. 4 H332  
 Eye Irrit. 2 H319  
 STOT SE 3 H335  
 EUH066  
 Route of exposure: Inhalation exposure  
 Respiratory tract

**ethyl acetate**

CAS No. 141-78-6  
 EINECS no. 205-500-4  
 Registration no. 01-2119475103-46  
 Concentration  $\geq$  1 < 10 %  
 Classification (Regulation (EC) No. 1272/2008)  
 Flam. Liq. 2 H225  
 Eye Irrit. 2 H319  
 STOT SE 3 H336  
 EUH066  
 Nervous system

**butanone**

CAS No. 78-93-3

Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

EINECS no.	201-159-0			
Registration no.	01-2119457290-43			
Concentration	>= 1	< 10	%	
Classification (Regulation (EC) No. 1272/2008)	Flam. Liq. 2	H225		
	Eye Irrit. 2	H319		
	STOT SE 3	H336		Nervous system
		EUH066		

**Note**

For explanation of abbreviations see section 16.

This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57) (if not listed in Section 3).

**4. First aid measures****4.1. Description of first aid measures****General information**

If unconscious place in recovery position and seek medical advice. In all cases of doubt, or when symptoms persist, seek medical attention. First aider: Pay attention to self-protection! Remove affected person from danger area, lay him down.

**After inhalation**

In case of accident by inhalation: remove casualty to fresh air and keep at rest. Keep warm, calm and covered up. In all cases of doubt, or when symptoms persist, seek medical attention.

**After skin contact**

Wash off immediately with soap and water. Do NOT use solvents or thinners. Consult a doctor if skin irritation persists.

**After eye contact**

Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice. Take medical treatment.

**After ingestion**

Do not induce vomiting. Take medical treatment.

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

Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness. High concentration of vapours may cause irritation to eyes and respiratory system and produce narcotic effects.

**4.3. Indication of any immediate medical attention and special treatment needed****Hints for the physician / treatment**

Treat symptomatically.

**5. Firefighting measures****5.1. Extinguishing media****Suitable extinguishing media**

Recommended: alcohol resistant foam, CO<sub>2</sub>, powders, water spray/mist

**Non suitable extinguishing media**

Do not use a solid water stream as it may scatter and spread fire.

Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

## 5.2. Special hazards arising from the substance or mixture

Fire will produce dense black smoke. In a fire, hazardous decomposition products may be produced. Exposure to decomposition products may cause a health hazard. Vapours can form an explosive mixture with air.

## 5.3. Advice for firefighters

### Special protective equipment for fire-fighting

In case of combustion evolution of dangerous gases possible. Use self-contained breathing apparatus.

### Other information

Cool closed containers exposed to fire with water. Do not allow run-off from fire fighting to enter drains or water courses. Standard procedure for chemical fires.

## 6. Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Eliminate all ignition sources if safe to do so. Ensure adequate ventilation. Do not inhale vapours. Do not inhale gases. Do not inhale mist.

### 6.2. Environmental precautions

Do not allow to enter drains or waterways. Do not allow to enter soil, waterways or waste water canal. In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

### 6.3. Methods and material for containment and cleaning up

Contain and collect spillage with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in container for disposal according to local regulations (see section 13). Clean contaminated floors and objects thoroughly with water and detergents, observing environmental regulations. Do NOT use solvents or thinners. Send in suitable containers for recovery or disposal.

### 6.4. Reference to other sections

Refer to protective measures listed in Sections 7 and 8.

## 7. Handling and storage

### 7.1. Precautions for safe handling

#### Advice on safe handling

Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentration higher than the occupational exposure limits. Keep container tightly closed and dry in a cool, well-ventilated place. Use only with adequate ventilation/personal protection. Ensure adequate ventilation. Provide for sufficient ventilation. This can be achieved by local exhaust or general exhaust air collection. Wear a suitable respirator if the ventilation is not sufficient to keep the solvent vapour concentration below the occupational limit values. Avoid contact with skin and eyes. Avoid inhalation of vapour and spray mist. Do not eat, drink or smoke when using this product. Use personal protective clothing. For personal protection see Section 8.

#### Advice on protection against fire and explosion

Vapours can form an explosive mixture with air. Vapours are heavier than air and may spread along floors. In addition, the product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Mixture may charge electrostatically: always use earthing leads when transferring from one container to another. Take measures to prevent the build up of electrostatic charge. Wear shoes with conductive soles. No sparking tools should be used. Fight fire with normal precautions from a reasonable distance.

### 7.2. Conditions for safe storage, including any incompatibilities

Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

### Requirements for storage rooms and vessels

Provide solvent-resistant and impermeable floor. Keep only in the original container in a cool, well ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

### Hints on storage assembly

Store away from oxidising agents, from strongly alkaline and strongly acid materials.

### Storage classes

Storage class according to TRGS 510      3                      Flammable liquid

### Further information on storage conditions

Protect from frost. Protect from heat and direct sunlight. Keep away from sources of ignition - No smoking. Store in accordance with the particular national regulations.

## 7.3. Specific end use(s)

See exposure scenario, if available.

## 8. Exposure controls/personal protection

### 8.1. Control parameters

#### Exposure limit values

##### 2-methoxy-1-methylethyl acetate

List	Directive 2017/164 EG			
Value	275	mg/m <sup>3</sup>	50	ppm(V)
Short term exposure limit	550	mg/m <sup>3</sup>	100	ppm(V)
Status:	12/2009			

##### 2-methoxy-1-methylethyl acetate

List	EH40			
Value	274	mg/m <sup>3</sup>	50	ppm(V)
Short term exposure limit	548	mg/m <sup>3</sup>	100	ppm(V)
Skin resorption / sensibilisation:	Sk; Status: 01/2020			

##### 4-methylpentan-2-one

List	Directive 2017/164 EG			
Value	83	mg/m <sup>3</sup>	20	ppm(V)
Short term exposure limit	208	mg/m <sup>3</sup>	50	ppm(V)
Status:	12/2009			

##### 4-methylpentan-2-one

List	EH40			
Value	208	mg/m <sup>3</sup>	50	ppm(V)
Short term exposure limit	416	mg/m <sup>3</sup>	100	ppm(V)
Skin resorption / sensibilisation:	Sk; Status: 01/2020			

##### butanone

List	Directive 2017/164 EG			
Value	600	mg/m <sup>3</sup>	200	ppm(V)
Short term exposure limit	900	mg/m <sup>3</sup>	300	ppm(V)
Status:	12/2009			

##### butanone

List	EH40			
Value	600	mg/m <sup>3</sup>	200	ppm(V)
Short term exposure limit	899	mg/m <sup>3</sup>	300	ppm(V)
Skin resorption / sensibilisation:	Sk; Status: 01/2020			

Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

**ethyl acetate**

List	Directive 2017/164 EG			
Value	734	mg/m <sup>3</sup>	200	ppm(V)
Short term exposure limit	1468	mg/m <sup>3</sup>	400	ppm(V)
Status:	02/2017			

**ethyl acetate**

List	EH40			
Value	734	mg/m <sup>3</sup>	200	ppm(V)
Short term exposure limit	1468	mg/m <sup>3</sup>	400	ppm(V)
Status:	01/2020			

**isobutyl acetate**

List	EH40			
Value	724	mg/m <sup>3</sup>	150	ppm(V)
Short term exposure limit	903	mg/m <sup>3</sup>	187	ppm(V)
Status:	01/2020			

**isobutyl acetate**

List	Directive 2017/164 EG			
Value	241	mg/m <sup>3</sup>	50	ppm(V)
Short term exposure limit	723	mg/m <sup>3</sup>	150	ppm(V)
Status:	10/2019			

**n-butyl acetate**

List	EH40			
Value	724	mg/m <sup>3</sup>	150	ppm(V)
Short term exposure limit	966	mg/m <sup>3</sup>	200	ppm(V)
Status:	01/2020			

**n-butyl acetate**

List	Directive 2017/164 EG			
Value	241	mg/m <sup>3</sup>	50	ppm(V)
Short term exposure limit	723	mg/m <sup>3</sup>	150	ppm(V)
Status:	10/2019			

**Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics**

List	EH40			
Value	1200	mg/m <sup>3</sup>		
Status:	01/2020			

**Other information**

-

**Derived No/Minimal Effect Levels (DNEL/DMEL)**

**2-methoxy-1-methylethyl acetate**

Type of value	Derived No Effect Level (DNEL)		
Reference group	Workers (professional)		
Duration of exposure	Long-term		
Route of exposure	inhalative		
Mode of action	Systemic effects		
Concentration	275		mg/m <sup>3</sup>

Type of value	Derived No Effect Level (DNEL)		
Reference group	Workers (professional)		
Duration of exposure	Long-term		
Route of exposure	Dermal exposure		
Mode of action	Systemic effects		

Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

Concentration 153,5 mg/kg/d

Type of value Derived No Effect Level (DNEL)

Reference group Consumer

Duration of exposure Long-term

Route of exposure Oral exposure

Mode of action Systemic effects

Concentration 1,67 mg/kg/d

Type of value Derived No Effect Level (DNEL)

Reference group Consumer

Duration of exposure Long-term

Route of exposure inhalative

Mode of action Systemic effects

Concentration 33 mg/m<sup>3</sup>

Type of value Derived No Effect Level (DNEL)

Reference group Consumer

Duration of exposure Long-term

Route of exposure Dermal exposure

Mode of action Systemic effects

Concentration 54,8 mg/kg

**isobutyl acetate**

Type of value Derived No Effect Level (DNEL)

Reference group Workers (professional)

Duration of exposure Long-term

Route of exposure Dermal exposure

Mode of action Systemic effects

Concentration 10 mg/kg/d

Type of value Derived No Effect Level (DNEL)

Reference group Workers (professional)

Duration of exposure Long-term

Route of exposure inhalative

Mode of action Systemic effects

Concentration 300 mg/m<sup>3</sup>

Type of value Derived No Effect Level (DNEL)

Reference group Workers (professional)

Duration of exposure Long-term

Route of exposure inhalative

Mode of action Local effects

Concentration 300 mg/m<sup>3</sup>

Type of value Derived No Effect Level (DNEL)

Reference group Consumer

Duration of exposure Long-term

Route of exposure Dermal exposure

Mode of action Systemic effects

Concentration 5 mg/kg/d

Type of value Derived No Effect Level (DNEL)



Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

Reference group	Consumer	
Duration of exposure	Long-term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	35,7	mg/m <sup>3</sup>

Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long-term	
Route of exposure	inhalative	
Mode of action	Local effects	
Concentration	35,7	mg/m <sup>3</sup>

Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Short-term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	300	mg/m <sup>3</sup>

Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Short-term	
Route of exposure	inhalative	
Mode of action	Local effects	
Concentration	300	mg/m <sup>3</sup>

Type of value	Derived No Effect Level (DNEL)	
Reference group	Workers (professional)	
Duration of exposure	Short-term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	600	mg/m <sup>3</sup>

Type of value	Derived No Effect Level (DNEL)	
Reference group	Workers (professional)	
Duration of exposure	Short-term	
Route of exposure	inhalative	
Mode of action	Local effects	
Concentration	600	mg/m <sup>3</sup>

**n-butyl acetate**

Type of value	Derived No Effect Level (DNEL)	
Reference group	Workers (professional)	
Duration of exposure	Long-term	
Route of exposure	Dermal exposure	
Mode of action	Systemic effects	
Concentration	11	mg/kg/d

Type of value	Derived No Effect Level (DNEL)	
Reference group	Workers (professional)	
Duration of exposure	Short-term	
Route of exposure	inhalative	

Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

Mode of action	Systemic effects	
Concentration	600	mg/m <sup>3</sup>
Type of value	Derived No Effect Level (DNEL)	
Reference group	Workers (professional)	
Duration of exposure	Short-term	
Route of exposure	inhalative	
Mode of action	Local effects	
Concentration	600	mg/m <sup>3</sup>
Type of value	Derived No Effect Level (DNEL)	
Reference group	Workers (professional)	
Duration of exposure	Long-term	
Route of exposure	inhalative	
Mode of action	Local effects	
Concentration	300	mg/m <sup>3</sup>
Type of value	Derived No Effect Level (DNEL)	
Reference group	Workers (professional)	
Duration of exposure	Long-term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	300	mg/m <sup>3</sup>
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long-term	
Route of exposure	Dermal exposure	
Mode of action	Systemic effects	
Concentration	6	mg/kg/d
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long-term	
Route of exposure	Oral exposure	
Mode of action	Systemic effects	
Concentration	2	mg/kg/d
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Short-term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	300	mg/m <sup>3</sup>
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Short-term	
Route of exposure	inhalative	
Mode of action	Local effects	
Concentration	300	mg/m <sup>3</sup>
Type of value	Derived No Effect Level (DNEL)	

Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

Reference group	Consumer	
Duration of exposure	Long-term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	35,7	mg/m <sup>3</sup>

Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long-term	
Route of exposure	inhalative	
Mode of action	Local effects	
Concentration	35,7	mg/m <sup>3</sup>

**Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics**

Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long-term	
Route of exposure	Oral exposure	
Mode of action	Systemic effects	
Concentration	699	mg/kg/d

Type of value	Derived No Effect Level (DNEL)	
Reference group	Workers (professional)	
Duration of exposure	Long-term	
Route of exposure	Dermal exposure	
Mode of action	Systemic effects	
Concentration	773	mg/kg/d

Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long-term	
Route of exposure	Dermal exposure	
Mode of action	Systemic effects	
Concentration	699	mg/kg/d

Type of value	Derived No Effect Level (DNEL)	
Reference group	Workers (professional)	
Duration of exposure	Long-term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	2035	mg/m <sup>3</sup>

Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long-term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	608	mg/kg/d

**4-methylpentan-2-one**

Type of value	Derived No Effect Level (DNEL)	
Reference group	Workers (professional)	
Duration of exposure	Short-term	

Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	208	mg/m <sup>3</sup>
Type of value	Derived No Effect Level (DNEL)	
Reference group	Workers (professional)	
Duration of exposure	Short-term	
Route of exposure	inhalative	
Mode of action	Local effects	
Concentration	208	mg/m <sup>3</sup>
Type of value	Derived No Effect Level (DNEL)	
Reference group	Workers (professional)	
Duration of exposure	Long-term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	83	mg/m <sup>3</sup>
Type of value	Derived No Effect Level (DNEL)	
Reference group	Workers (professional)	
Duration of exposure	Long-term	
Route of exposure	inhalative	
Mode of action	Local effects	
Concentration	83	mg/m <sup>3</sup>
Type of value	Derived No Effect Level (DNEL)	
Reference group	Workers (professional)	
Duration of exposure	Long-term	
Route of exposure	Dermal exposure	
Mode of action	Systemic effects	
Concentration	11,8	mg/kg/d
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long-term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	14,7	mg/m <sup>3</sup>
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long-term	
Route of exposure	inhalative	
Mode of action	Local effects	
Concentration	14,7	mg/m <sup>3</sup>
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Short-term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	155,2	mg/m <sup>3</sup>

Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Short-term	
Route of exposure	inhalative	
Mode of action	Local effects	
Concentration	155,2	mg/m <sup>3</sup>
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long-term	
Route of exposure	Dermal exposure	
Mode of action	Systemic effects	
Concentration	4,2	mg/kg/d
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long-term	
Route of exposure	Oral exposure	
Mode of action	Systemic effects	
Concentration	4,2	mg/kg/d
<b>ethyl acetate</b>		
Type of value	Derived No Effect Level (DNEL)	
Reference group	Workers (professional)	
Duration of exposure	Long-term	
Route of exposure	Dermal exposure	
Mode of action	Systemic effects	
Concentration	63	mg/kg/d
Type of value	Derived No Effect Level (DNEL)	
Reference group	Workers (professional)	
Duration of exposure	Long-term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	734	mg/m <sup>3</sup>
Type of value	Derived No Effect Level (DNEL)	
Reference group	Workers (professional)	
Duration of exposure	Long-term	
Route of exposure	inhalative	
Mode of action	Local effects	
Concentration	734	mg/m <sup>3</sup>
Type of value	Derived No Effect Level (DNEL)	
Reference group	Workers (professional)	
Duration of exposure	Short-term	
Route of exposure	inhalative	
Mode of action	Local effects	
Concentration	1468	mg/m <sup>3</sup>
Type of value	Derived No Effect Level (DNEL)	
Reference group	Workers (professional)	
Duration of exposure	Short-term	

Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	1468	mg/m <sup>3</sup>
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Short-term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	734	mg/m <sup>3</sup>
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Short-term	
Route of exposure	inhalative	
Mode of action	Local effects	
Concentration	734	mg/m <sup>3</sup>
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long-term	
Route of exposure	Dermal exposure	
Mode of action	Systemic effects	
Concentration	37	mg/kg/d
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long-term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	367	mg/m <sup>3</sup>
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long-term	
Route of exposure	Oral exposure	
Mode of action	Systemic effects	
Concentration	4,5	mg/kg/d
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long-term	
Route of exposure	inhalative	
Mode of action	Local effects	
Concentration	367	mg/m <sup>3</sup>
<b>butanone</b>		
Type of value	Derived No Effect Level (DNEL)	
Reference group	Workers (industrial)	
Duration of exposure	Long-term	
Route of exposure	inhalative	
Concentration	600	mg/m <sup>3</sup>

Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

Type of value	Derived No Effect Level (DNEL)	
Reference group	Workers (industrial)	
Duration of exposure	Long-term	
Route of exposure	Dermal exposure	
Concentration	1161	mg/kg/d

Type of value	Derived No Effect Level (DNEL)	
Reference group	Workers (professional)	
Duration of exposure	Long-term	
Route of exposure	inhalative	
Concentration	600	mg/m <sup>3</sup>

Type of value	Derived No Effect Level (DNEL)	
Reference group	Workers (professional)	
Duration of exposure	Long-term	
Route of exposure	Dermal exposure	
Concentration	1161	mg/kg/d

Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long-term	
Route of exposure	inhalative	
Concentration	106	mg/m <sup>3</sup>

Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long-term	
Route of exposure	Oral exposure	
Concentration	31	mg/kg/d

Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long-term	
Route of exposure	Dermal exposure	
Concentration	412	mg/kg/d

**Predicted No Effect Concentration (PNEC)**

**2-methoxy-1-methylethyl acetate**

Type of value	PNEC	
Type	Freshwater	
Concentration	0,635	mg/l

Type of value	PNEC	
Type	Saltwater	
Concentration	0,0635	mg/l

Type of value	PNEC	
Conditions	sporadic release	
Concentration	6,35	mg/l

Type of value	PNEC	
Type	Fresh water sediment	

Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

Concentration	3,29	mg/kg
Type of value	PNEC	
Type	saltwater sediment	
Concentration	0,329	mg/kg
Type of value	PNEC	
Type	Soil	
Concentration	0,29	mg/kg
Type of value	PNEC	
Type	Sewage treatment plant (STP)	
Concentration	100	mg/l

**isobutyl acetate**

Type of value	PNEC	
Type	Freshwater	
Concentration	0,17	mg/l
Type of value	PNEC	
Type	Saltwater	
Concentration	0,017	mg/l
Type of value	PNEC	
Type	Water	
Conditions	sporadic release	
Concentration	0,34	mg/l
Type of value	PNEC	
Type	Sewage treatment plant (STP)	
Concentration	200	mg/l
Type of value	PNEC	
Type	Fresh water sediment	
Concentration	0,877	mg/kg
Type of value	PNEC	
Type	saltwater sediment	
Concentration	0,0877	mg/kg
Type of value	PNEC	
Type	Soil	
Concentration	0,0755	mg/kg

**n-butyl acetate**

Type of value	PNEC	
Type	Freshwater	
Concentration	0,18	mg/l
Type of value	PNEC	
Type	Saltwater	
Concentration	0,018	mg/l



Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

Type of value	PNEC		
Type	Sewage treatment plant (STP)		
Concentration	35,6	mg/l	
Type of value	PNEC		
Type	Water		
Conditions	sporadic release		
Concentration	0,36	mg/l	
Type of value	PNEC		
Type	Fresh water sediment		
Concentration	0,981	mg/kg	
Type of value	PNEC		
Type	saltwater sediment		
Concentration	0,0981	mg/l	
Type of value	PNEC		
Type	Soil		
Concentration	0,0903	mg/kg	
<b>4-methylpentan-2-one</b>			
Type of value	PNEC		
Type	Freshwater		
Concentration	0,6	mg/l	
Type of value	PNEC		
Type	Saltwater		
Concentration	0,06	mg/l	
Type of value	PNEC		
Conditions	sporadic release		
Concentration	1,5	mg/l	
Type of value	PNEC		
Type	Sewage treatment plant (STP)		
Concentration	27,5	mg/l	
Type of value	PNEC		
Type	Fresh water sediment		
Concentration	8,27	mg/kg	
Type of value	PNEC		
Type	saltwater sediment		
Concentration	0,83	mg/kg	
Type of value	PNEC		
Type	Soil		
Concentration	1,3	mg/kg	

**ethyl acetate**

Type of value	PNEC		
Type	Saltwater		

Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

Concentration	0,026	mg/l
Type of value	PNEC	
Type	Freshwater	
Concentration	0,26	mg/l
Type of value	PNEC	
Type	Soil	
Concentration	0,24	mg/kg
Type of value	PNEC	
Type	Sewage treatment plant (STP)	
Concentration	650	mg/l
Type of value	PNEC	
Type	saltwater sediment	
Concentration	0,125	mg/kg
Type of value	PNEC	
Type	Fresh water sediment	
Concentration	1,25	mg/kg
Type of value	PNEC	
Conditions	sporadic release	
Concentration	1,65	mg/l
<b>butanone</b>		
Type of value	PNEC	
Type	Freshwater	
Concentration	55,8	mg/l
Type of value	PNEC	
Type	Saltwater	
Concentration	55,8	mg/l
Type of value	PNEC	
Type	Fresh water sediment	
Concentration	284,74	mg/kg
Type of value	PNEC	
Type	saltwater sediment	
Concentration	287,7	mg/kg
Type of value	PNEC	
Type	Soil	
Concentration	22,5	mg/kg

## 8.2. Exposure controls

### Exposure controls

Users are advised to consider national Occupational Exposure Limits or other equivalent values. Provide for sufficient ventilation. This can be achieved by local exhaust or general exhaust air collection. Wear a suitable respirator if the ventilation is not sufficient to keep the solvent vapour concentration below the

Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

occupational limit values.

**Respiratory protection**

Avoid inhalation of vapour and spray mist. Use breathing apparatus if exposed to vapours/dust/aerosol.  
Recommended Filter type: Respiratory protection mask with combination filter A/P2

**Hand protection**

Protective gloves complying with EN 374.

Glove material

Multilayer gloves made from

Appropriate Material Fluorinated rubber / butyl-rubber

Material thickness  $\geq$  0,7 mmBreakthrough time  $\geq$  30 min

This recommendation is valid only for the product named in this safety data sheet supplied by us, and only for the indicated intended use purposes.

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.

The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed.

The breakthrough time must be greater than the end use time of the product.

Gloves should be replaced regularly and if there is any sign of damage to the glove material.

The performance or effectiveness of the glove may be reduced by physical/ chemical damage and poor maintenance.

**Eye protection**

Wear eye glasses with side protection according to EN 166.

**Body protection**

Wear suitable protective clothing. Remove contaminated clothing and wash it before reuse. Wash hands before breaks and after work.

**9. Physical and chemical properties****9.1. Information on basic physical and chemical properties**

<b>Form</b>	liquid
<b>Colour</b>	colourless
<b>Odour</b>	solvent-like
<b>Odour threshold</b>	
Remarks	not determined
<b>pH value</b>	
Remarks	not determined
<b>Melting point</b>	
Remarks	not determined
<b>Freezing point</b>	
Remarks	not determined
<b>Initial boiling point and boiling range</b>	
Value	74 to 190 °C
<b>Flash point</b>	
Value	7 °C
<b>Evaporation rate</b>	
Remarks	not determined

Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

**Flammability (solid, gas)**

not determined

**Upper/lower flammability or explosive limits**

Remarks not determined

**Vapour pressure**

Remarks not determined

**Vapour density**

Remarks not determined

**Density**

Value	appr. 0,896			kg/l
Temperature	20	°C		

**Solubility in water**

Remarks not determined

**Solubility(ies)**

Remarks not determined

**Partition coefficient: n-octanol/water**

Remarks not determined

**Ignition temperature**

Remarks not determined

**Decomposition temperature**

Remarks not determined

**Viscosity**

Remarks not determined

**Efflux time**

Value	27	to	33	s
Temperature	20	°C		
Method	DIN 53211 4 mm			

**Explosive properties**

evaluation not determined

**Oxidising properties**

Remarks not determined

**9.2. Other information****Non-volatile content**

Value	19,3	%
Method	calculated value	

**Other information**

This information is not available.

**10. Stability and reactivity****10.1. Reactivity**

Stable under recommended storage and handling conditions (see section 7).

**10.2. Chemical stability**

Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

Stable under normal conditions.

**10.3. Possibility of hazardous reactions**

To avoid thermal decomposition, do not overheat.

**10.4. Conditions to avoid**

Isolate from sources of heat, sparks and open flame.

**10.5. Incompatible materials**

Keep away from oxidising agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions.

**10.6. Hazardous decomposition products**Carbon monoxide and carbon dioxide, nitrous oxides (NO<sub>x</sub>), dense black smoke, No decomposition if used as prescribed.**11. Toxicological information****11.1. Information on toxicological effects****Acute oral toxicity**

Method	Calculation method (Regulation (EC) No. 1272/2008)
Remarks	Based on available data, the classification criteria are not met.

**Acute dermal toxicity**

Method	Calculation method (Regulation (EC) No. 1272/2008)
Remarks	Based on available data, the classification criteria are not met.

**Acute inhalational toxicity**

ATE	>	20	mg/l
Administration/Form	Dust/Mist		
Method	calculated value (Regulation (EC) No. 1272/2008)		
Remarks	Based on available data, the classification criteria are not met.		

**Acute inhalative toxicity (Components)****4-methylpentan-2-one**

Species	rat		
LC50	2,9		mg/l
Duration of exposure	4	h	
Administration/Form	Dust/Mist		
Source	2 (reliable with restrictions)		

**Skin corrosion/irritation**

Method	Calculation method (Regulation (EC) No. 1272/2008)
Remarks	Based on available data, the classification criteria are not met.

**Serious eye damage/irritation**

evaluation	irritant
Method	Calculation method (Regulation (EC) No. 1272/2008)
Remarks	The classification criteria are met.

**Serious eye damage/irritation (Components)****4-methylpentan-2-one**

Species	rabbit		
Observation Period	72	h	
evaluation	Irritating to eyes and respiratory system.		
Source	1 (reliable without restriction)		

Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

**butanone**

Species rabbit  
 Observation Period 7 d  
 evaluation Severe eye irritation  
 Source 2 (reliable with restrictions)

**ethyl acetate**

Species rabbit  
 Observation Period 24 h  
 evaluation Irritating to eyes.  
 Source 2 (reliable with restrictions)

**Sensitization**

Method Calculation method (Regulation (EC) No. 1272/2008)  
 Remarks Based on available data, the classification criteria are not met.

**Mutagenicity**

Method Calculation method (Regulation (EC) No. 1272/2008)  
 Remarks Based on available data, the classification criteria are not met.

**Reproductive toxicity**

Method Calculation method (Regulation (EC) No. 1272/2008)  
 Remarks Based on available data, the classification criteria are not met.

**Carcinogenicity**

Method Calculation method (Regulation (EC) No. 1272/2008)  
 Remarks Based on available data, the classification criteria are not met.

**Specific Target Organ Toxicity (STOT)****Single exposure**

Method Calculation method (Regulation (EC) No. 1272/2008)  
 Remarks The classification criteria are met.  
 evaluation May cause drowsiness or dizziness.

**Repeated exposure**

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

**Specific Target Organ Toxicity (STOT) (Components)****4-methylpentan-2-one**

evaluation May cause respiratory irritation.  
 Route of exposure Inhalation exposure  
 Organs: Nose, respiratory system, eyes  
 Remarks May cause respiratory irritation.

**butanone****Specific target organ toxicity - single exposure**

Remarks Organs: Nervous system  
 Possible narcotic effects (drowsiness, dizziness).

**ethyl acetate****Specific target organ toxicity - single exposure**

Remarks Organs: Nervous system  
 Possible narcotic effects (drowsiness, dizziness).

**isobutyl acetate****Specific target organ toxicity - repeated exposure**

Organs: Nervous system

Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

Remarks Possible narcotic effects (drowsiness, dizziness).

**n-butyl acetate****Specific target organ toxicity - repeated exposure**

Organs: Nervous system

Remarks Possible narcotic effects (drowsiness, dizziness).

**Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics****Specific target organ toxicity - single exposure**

evaluation May cause drowsiness or dizziness.

Organs: Nervous system

Remarks Possible narcotic effects (drowsiness, dizziness).

**2-methoxy-1-methylethyl acetate****Specific target organ toxicity - repeated exposure**

evaluation May cause drowsiness or dizziness.

Organs: Nervous system

**Aspiration hazard**

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

**Other information**

No toxicological data are available.

**12. Ecological information****12.1. Toxicity****General information**

For this subsection there is no ecotoxicological data available on the product as such.

**Daphnia toxicity (Components)****Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics**

Species	Daphnia magna (Water flea)		
EC50	3		mg/l
Duration of exposure	48	h	

**Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics**

Species	Daphnia magna (Water flea)		
NOEC	0,17		mg/l
Duration of exposure	21	d	

**Algae toxicity (Components)****Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics**

Species	Pseudokirchneriella subcapitata (green algae)		
EC50	10		mg/l
Duration of exposure	72	h	
Method	OECD 201		

**12.2. Persistence and degradability****General information**

For this subsection there is no ecotoxicological data available on the product as such.

**Biodegradability (Components)****Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics**

evaluation Readily biodegradable.

Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

### 12.3. Bioaccumulative potential

#### General information

For this subsection there is no ecotoxicological data available on the product as such.

#### Partition coefficient: n-octanol/water

Remarks not determined

### 12.4. Mobility in soil

#### General information

For this subsection there is no ecotoxicological data available on the product as such.

#### Mobility in soil

no data available

### 12.5. Results of PBT and vPvB assessment

#### General information

For this subsection there is no ecotoxicological data available on the product as such.

### 12.6. Other adverse effects

#### General information

For this subsection there is no ecotoxicological data available on the product as such.

#### General information / ecology

For this subsection there is no ecotoxicological data available on the product as such.

## 13. Disposal considerations

### 13.1. Waste treatment methods

#### Disposal recommendations for the product

EWC waste code	080111 - waste paint and varnish containing organic solvents or other dangerous substances
EWC waste code	200127 - paint, inks, adhesives and resins containing dangerous substances

Where possible recycling is preferred to disposal or incineration.  
Do not allow to enter drains or waterways.

#### modified product

EWC waste code	080113 - sludges from paint or varnish containing organic solvents or other dangerous substances
EWC waste code	080115 - aqueous sludges containing paint or varnish containing organic solvents or other dangerous substances

#### Dried residues

EWC waste code	080112 - waste lacquers and waste paint except those falling under 080111
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#### Disposal recommendations for packaging

EWC waste code	150110 - packaging containing residues of or contaminated by dangerous substances
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Completely emptied packagings can be given for recycling.

## 14. Transport information






Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

	Land transport ADR/RID	Marine transport IMDG/GGVSee	Air transport ICAO/IATA
Tunnel restriction code	D/E		
14.1. UN number	1263	1263	1263
14.2. UN proper shipping name	PAINT	PAINT	PAINT
14.3. Transport hazard class(es)	3	3	3
Label			
14.4. Packing group	II	II	II
Special provision	640D		
Limited Quantity	5 l		
Transport category	2		

## 15. Regulatory information

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

#### VOC

VOC (EU) 80,7 % 723 g/l

#### Other information

All components are contained in the TSCA inventory or exempted.

All components are contained in the IECSC inventory.

### 15.2. Chemical safety assessment

For this substance / mixture a chemical safety assessment was not carried out.

## 16. Other information

### Hazard statements listed in Chapter 3

EUH066	Repeated exposure may cause skin dryness or cracking.
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long lasting effects.

Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

**CLP categories listed in Chapter 3**

Acute Tox. 4	Acute toxicity, Category 4
Aquatic Chronic 2	Hazardous to the aquatic environment, chronic, Category 2
Asp. Tox. 1	Aspiration hazard, Category 1
Eye Irrit. 2	Eye irritation, Category 2
Flam. Liq. 2	Flammable liquid, Category 2
Flam. Liq. 3	Flammable liquid, Category 3
STOT SE 3	Specific target organ toxicity - single exposure, Category 3

**Abbreviations**

Flam. Liq - Flammable liquids  
 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  
 IATA-DGR - Dangerous Goods Regulations by the "International Air Transport Association" (IATA)  
 ICAO-TI - Technical Instructions by the "International Civil Aviation Organization" (ICAO)  
 GHS - Globally Harmonized System of Classification and Labelling of Chemicals  
 EINECS - European Inventory of Existing Commercial Chemical Substances  
 CAS - Chemical Abstracts Service (division of the American Chemical Society)  
 GefStoffV - Gefahrstoffverordnung (Ordinance on Hazardous Substances, Germany)  
 LOAEL - Lowest Observed Adverse Effect Level  
 LOEL - Lowest Observed Effect Level  
 NOAEL - No Observed Adverse Effect Level  
 NOEC - No Observed Effect Concentration  
 NOEL - No Observed Effect Level  
 OECD - Organisation for Economic Cooperation and Development  
 VOC - Volatile Organic Compounds

Changes since the last version are highlighted in the margin (\*\*\*). This version replaces all previous versions.

This safety datasheet only contains information relating to safety and does not replace any product information or product specification.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification.

The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

The information contained herein is based on the present state of our knowledge and does therefore not guarantee certain properties.

**Annex to the extended Safety Data Sheet (eSDS)****Short title of the exposure scenario**

ES001 - Industrial applications: industrial spraying (inside)

**Use of the substance/preparation**

Surface treatment of wood and other materials

**Use**

SU3	Industrial uses: Uses of substances as such or in preparations at industrial sites
ERC4	Industrial use of processing aids in processes and products, not becoming part of articles
ERC5	Industrial use resulting in inclusion into or onto a matrix

Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

PROC7 Industrial spraying

## Contributing exposure scenario controlling environmental exposure

### Use

ERC4 Industrial use of processing aids in processes and products, not becoming part of articles

ERC5 Industrial use resulting in inclusion into or onto a matrix

### Physical form liquid

### Maximum amount used per time or activity

Emission days per site: <= 300

### Other relevant operational conditions

Use: Room temperature

Drying and through-curing takes place at ambient temperature or at higher temperatures.

Where possible recycling is preferred to disposal or incineration.

Do not allow to enter soil, waterways or waste water canal.

Dispose of rinse water in accordance with local and national regulations.

### Waste water

Do not discharge into the drains/surface waters/groundwater. Spray cabin waters are to be conducted after mechanical pretreatment into a wastewater treatment facility.

### Exhaust air

Keep container closed. Avoid release to the environment.

### Soil

Floors should be impervious, resistant to liquids and easy to clean.

### Disposal recommendations for the product

EWC waste code 080111 - waste paint and varnish containing organic solvents or other dangerous substances  
200127 - paint, inks, adhesives and resins containing dangerous substances

Where possible recycling is preferred to disposal or incineration.

Do not allow to enter drains or waterways.

### modified product

EWC waste code 080113 - sludges from paint or varnish containing organic solvents or other dangerous substances  
080115 - aqueous sludges containing paint or varnish containing organic solvents or other dangerous substances

### Dried residues

EWC waste code 080112 - waste lacquers and waste paint except those falling under 080111

### Disposal recommendations for packaging

EWC waste code 150110 - packaging containing residues of or contaminated by dangerous substances

Completely emptied packagings can be given for recycling.

## Contributing exposure scenario controlling worker exposure

### Use

SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites

Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

PROC7                      Industrial spraying  
**Physical form**                      liquid

**Maximum amount used per time or activity**

Duration of exposure	<=	8	h/d
Frequency of exposure	<=	220	d/a

**Other relevant operational conditions**

Use: Room temperature  
Drying and through-curing takes place at ambient temperature or at higher temperatures.  
Read attached instructions before use.

**Product substance and product safety related measures**

Mainly used in closed systems. Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. Provide for sufficient ventilation. This can be achieved by local exhaust or general exhaust air collection. Wear a suitable respirator if the ventilation is not sufficient to keep the solvent vapour concentration below the occupational limit values.

**Respiratory protection**

Avoid inhalation of vapour and spray mist. Use breathing apparatus if exposed to vapours/dust/aerosol.  
Recommended Filter type: Respiratory protection mask with combination filter A/P2

**Hand protection**

Protective gloves complying with EN 374.  
Glove material  
Multilayer gloves made from  
Appropriate Material                      Fluorinated rubber / butyl-rubber  
Material thickness                      >= 0,7  
Breakthrough time                      >= 30

This recommendation is valid only for the product named in this safety data sheet supplied by us, and only for the indicated intended use purposes.

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.

The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed.

The breakthrough time must be greater than the end use time of the product.

Gloves should be replaced regularly and if there is any sign of damage to the glove material.

The performance or effectiveness of the glove may be reduced by physical/ chemical damage and poor maintenance.

**Eye protection**

Wear eye glasses with side protection according to EN 166.

**Body protection**

Wear suitable protective clothing. Remove contaminated clothing and wash it before reuse. Wash hands before breaks and after work.

**Exposure estimation and reference to its source****Workers (industrial)**

SU	SU3
PROC	PROC7
Assessment method	inhalation, long-term - local and systemic
Exposure assessment	27,54 mg/m <sup>3</sup>
Exposure assessment (method)	ECETOC TRA
Risk characterisation ratio (RCR)	0,1

Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

Lead substance

2-methoxy-1-methylethyl acetate

**Workers (industrial)**

SU

SU3

PROC

PROC7

Assessment method

dermal, long-term - local and systemic

Exposure assessment

2,14 mg/kg/d

Exposure assessment (method)

ECETOC TRA

Risk characterisation ratio (RCR)

0,01

Lead substance

2-methoxy-1-methylethyl acetate

**Workers (industrial)**

SU

SU3

PROC

PROC10

Assessment method

inhalation, long-term - local and systemic

Exposure assessment

55,08 mg/m<sup>3</sup>

Exposure assessment (method)

ECETOC TRA

Risk characterisation ratio (RCR)

0,2

Lead substance

2-methoxy-1-methylethyl acetate

**Workers (industrial)**

SU

SU3

PROC

PROC10

Assessment method

dermal, long-term - local and systemic

Exposure assessment

27,43 mg/kg/d

Exposure assessment (method)

ECETOC TRA

Risk characterisation ratio (RCR)

0,18

Lead substance

2-methoxy-1-methylethyl acetate

**Workers (industrial)**

SU

SU3

PROC

PROC13

Assessment method

inhalation, long-term - local and systemic

Exposure assessment

55,08 mg/m<sup>3</sup>

Exposure assessment (method)

ECETOC TRA

Risk characterisation ratio (RCR)

0,2

Lead substance

2-methoxy-1-methylethyl acetate

**Workers (industrial)**

SU

SU3

PROC

PROC13

Assessment method

dermal, long-term - local and systemic

Exposure assessment

13,71 mg/kg/d

Exposure assessment (method)

ECETOC TRA

Risk characterisation ratio (RCR)

0,09

Lead substance

2-methoxy-1-methylethyl acetate

**Workers (industrial)**

PROC

PROC7

Assessment method

inhalation, long-term - local and systemic

Indoor use

Exposure assessment

60,5 mg/m<sup>3</sup>

Exposure assessment (method)

ECETOC TRA

Risk characterisation ratio (RCR)

0,126

Lead substance

isobutyl acetate

**Workers (industrial)**

Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

PROC	PROC10
Assessment method	inhalation, long-term - local and systemic
	Indoor use
Exposure assessment	242 mg/m <sup>3</sup>
Exposure assessment (method)	ECETOC TRA
Risk characterisation ratio (RCR)	0,504
Lead substance	isobutyl acetate

**Workers (industrial)**

PROC	PROC13
Assessment method	inhalation, long-term - local and systemic
	Indoor use
Exposure assessment	242 mg/m <sup>3</sup>
Exposure assessment (method)	ECETOC TRA
Risk characterisation ratio (RCR)	0,504
Lead substance	isobutyl acetate

**Workers (industrial)**

PROC	PROC7
Assessment method	inhalation, long-term - local and systemic
	Indoor use
Exposure assessment	60,5 mg/m <sup>3</sup>
Exposure assessment (method)	ECETOC TRA
Risk characterisation ratio (RCR)	0,126
Lead substance	n-butyl acetate

**Workers (industrial)**

PROC	PROC10
Assessment method	inhalation, long-term - systemic
	Indoor use
Exposure assessment	242 mg/m <sup>3</sup>
Exposure assessment (method)	ECETOC TRA
Risk characterisation ratio (RCR)	0,504
Lead substance	n-butyl acetate

**Workers (industrial)**

PROC	PROC10
Assessment method	inhalation, long-term - systemic
	Outdoor use
Exposure assessment	242 mg/m <sup>3</sup>
Exposure assessment (method)	ECETOC TRA
Risk characterisation ratio (RCR)	0,504
Lead substance	n-butyl acetate

**Workers (industrial)**

PROC	PROC13
Assessment method	inhalation, long-term - systemic
	Indoor use
Exposure assessment	242 mg/m <sup>3</sup>
Exposure assessment (method)	ECETOC TRA
Risk characterisation ratio (RCR)	0,504
Lead substance	n-butyl acetate

**Workers (industrial)**

PROC	PROC13
Assessment method	inhalation, long-term - systemic
	Outdoor use

Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

Exposure assessment	242	mg/m <sup>3</sup>
Exposure assessment (method)	ECETOC TRA	
Risk characterisation ratio (RCR)	0,504	
Lead substance	n-butyl acetate	
<b>Workers (industrial)</b>		
SU	SU3	
PROC	PROC7	
Assessment method	inhalation, long-term - systemic	
	Indoor use	
Exposure assessment	0,020	mg/m <sup>3</sup>
Exposure assessment (method)	EASY TRA v3.5	
Risk characterisation ratio (RCR)	0,029	
Lead substance	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol	
<b>Workers (industrial)</b>		
SU	SU3	
PROC	PROC7	
Assessment method	dermal, long-term - systemic	
	Indoor use	
Exposure assessment	0,429	mg/kg/d
Exposure assessment (method)	EASY TRA v3.5	
Risk characterisation ratio (RCR)	0,143	
Lead substance	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol	
<b>Workers (industrial)</b>		
SU	SU3	
PROC	PROC10	
Assessment method	inhalation, long-term - systemic	
	Indoor use	
Exposure assessment	0,010	mg/m <sup>3</sup>
Exposure assessment (method)	EASY TRA v3.5	
Risk characterisation ratio (RCR)	0,014	
Lead substance	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol	
<b>Workers (industrial)</b>		
SU	SU3	
PROC	PROC10	
Assessment method	dermal, long-term - systemic	
	Indoor use	
Exposure assessment	0,274	mg/kg/d
Exposure assessment (method)	EASY TRA v3.5	
Risk characterisation ratio (RCR)	0,914	
Lead substance	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol	
<b>Workers (industrial)</b>		
SU	SU3	
PROC	PROC13	
Assessment method	inhalation, long-term - systemic	
	Indoor use	
Exposure assessment	0,002	mg/m <sup>3</sup>
Exposure assessment (method)	EASY TRA v3.5	
Risk characterisation ratio (RCR)	0,003	
Lead substance	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol	
<b>Workers (industrial)</b>		
SU	SU3	



Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

PROC	PROC13
Assessment method	dermal, long-term - systemic
Exposure assessment	Indoor use
Exposure assessment (method)	0,274 mg/kg/d
Risk characterisation ratio (RCR)	EASY TRA v3.5
Lead substance	0,914
	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol

**Workers (industrial)**

SU	SU3
PROC	PROC7
Assessment method	inhalation, long-term - systemic
Risk characterisation ratio (RCR)	Indoor use
Lead substance	0,75
	4-methylpentan-2-one

**Workers (industrial)**

SU	SU3
PROC	PROC7
Assessment method	dermal, long-term - systemic
Risk characterisation ratio (RCR)	Indoor use
Lead substance	0,5
	4-methylpentan-2-one

**Workers (industrial)**

SU	SU3
PROC	PROC10
Assessment method	inhalation, long-term - systemic
Risk characterisation ratio (RCR)	Indoor use
Lead substance	0,5
	4-methylpentan-2-one

**Workers (industrial)**

SU	SU3
PROC	PROC10
Assessment method	dermal, long-term - systemic
Risk characterisation ratio (RCR)	0,5
Lead substance	4-methylpentan-2-one

**Workers (industrial)**

SU	SU3
PROC	PROC13
Assessment method	inhalation, long-term - systemic
Risk characterisation ratio (RCR)	0,5
Lead substance	4-methylpentan-2-one

**Workers (industrial)**

SU	SU3
PROC	PROC13
Assessment method	dermal, long-term - systemic
Risk characterisation ratio (RCR)	0,5
Lead substance	4-methylpentan-2-one

**Workers (industrial)**

SU	SU3
PROC	PROC7
Assessment method	dermal, long-term - systemic



Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

Exposure assessment	63	mg/kg/d
Exposure assessment (method)	ECETOC TRA	
Risk characterisation ratio (RCR)	0,034	
Lead substance	ethyl acetate	

**Workers (industrial)**

SU	SU3	
PROC	PROC7	
Assessment method	inhalation, long-term - local	
Exposure assessment	734	mg/m <sup>3</sup>
Exposure assessment (method)	ECETOC TRA	
Risk characterisation ratio (RCR)	0,075	
Lead substance	ethyl acetate	

**Workers (industrial)**

SU	SU3	
PROC	PROC10	
Assessment method	dermal, long-term - systemic	
Exposure assessment	63	mg/kg/d
Exposure assessment (method)	ECETOC TRA	
Risk characterisation ratio (RCR)	0,011	
Lead substance	ethyl acetate	

**Workers (industrial)**

SU	SU3	
PROC	PROC10	
Assessment method	inhalation, long-term - local	
Exposure assessment	734	mg/m <sup>3</sup>
Exposure assessment (method)	ECETOC TRA	
Risk characterisation ratio (RCR)	0,075	
Lead substance	ethyl acetate	

**Information on estimated exposure and downstream-user guidance****Guidance for Downstream Users**

The downstream user can evaluate whether he operates within the conditions set in the exposure scenario on the basis of the information supplied. This evaluation can be conducted by an expert or using the risk assessment tools recommended by ECHA.

**Annex to the extended Safety Data Sheet (eSDS)****Short title of the exposure scenario**

ES003 - Professional uses: Non industrial spraying (inside)

**Use of the substance/preparation**

Surface treatment of wood and other materials

**Use**

SU22	Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
ERC8a	Wide dispersive indoor use of processing aids in open systems
ERC8c	Wide dispersive indoor use resulting in inclusion into or onto a matrix
PROC11	Non industrial spraying

**Contributing exposure scenario controlling environmental exposure**

Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

**Use**

ERC8a Wide dispersive indoor use of processing aids in open systems  
 ERC8c Wide dispersive indoor use resulting in inclusion into or onto a matrix

**Physical form** liquid**Maximum amount used per time or activity**

Emission days per site: &lt;= 250

**Other relevant operational conditions**

Use: Room temperature  
 Drying and through-curing takes place at ambient temperature or at higher temperatures.  
 Volatile organic substances will volatilise into the atmospheric air inside.  
 Where possible recycling is preferred to disposal or incineration.  
 Do not allow to enter soil, waterways or waste water canal.  
 Dispose of rinse water in accordance with local and national regulations.

**Waste water**

Do not discharge into the drains/surface waters/groundwater. Spray cabin waters are to be conducted after mechanical pretreatment into a wastewater treatment facility.

**Exhaust air**

Keep container closed. Avoid release to the environment.

**Soil**

Floors should be impervious, resistant to liquids and easy to clean.

**Disposal recommendations for the product**

EWC waste code 080111 - waste paint and varnish containing organic solvents or other dangerous substances  
 200127 - paint, inks, adhesives and resins containing dangerous substances

Where possible recycling is preferred to disposal or incineration.  
 Do not allow to enter drains or waterways.

**modified product**

EWC waste code 080113 - sludges from paint or varnish containing organic solvents or other dangerous substances  
 080115 - aqueous sludges containing paint or varnish containing organic solvents or other dangerous substances

**Dried residues**

EWC waste code 080112 - waste lacquers and waste paint except those falling under 080111

**Disposal recommendations for packaging**

EWC waste code 150110 - packaging containing residues of or contaminated by dangerous substances

Completely emptied packagings can be given for recycling.

**Contributing exposure scenario controlling worker exposure (professional)****Short title of the exposure scenario**

Substance number:CES006

**Use**

SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

PROC11 Non industrial spraying  
**Physical form** liquid

**Maximum amount used per time or activity**

Duration of exposure	<=	8	h/d
Frequency of exposure	<=	220	d/a

**Other relevant operational conditions**

Use: Room temperature  
 Drying and through-curing takes place at ambient temperature or at higher temperatures.  
 Volatile organic substances will volatilise into the atmospheric air inside.  
 Read attached instructions before use.

**Product substance and product safety related measures**

Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. Provide for sufficient ventilation. This can be achieved by local exhaust or general exhaust air collection. Wear a suitable respirator if the ventilation is not sufficient to keep the solvent vapour concentration below the occupational limit values.

**Respiratory protection**

Avoid inhalation of vapour and spray mist. Use breathing apparatus if exposed to vapours/dust/aerosol.  
 Recommended Filter type: Respiratory protection mask with combination filter A/P2

**Hand protection**

Protective gloves complying with EN 374.  
 Glove material  
 Multilayer gloves made from  
 Appropriate Material Fluorinated rubber / butyl-rubber  
 Material thickness >= 0,7  
 Breakthrough time >= 30

This recommendation is valid only for the product named in this safety data sheet supplied by us, and only for the indicated intended use purposes.

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.

The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed.

The breakthrough time must be greater than the end use time of the product.

Gloves should be replaced regularly and if there is any sign of damage to the glove material.

The performance or effectiveness of the glove may be reduced by physical/ chemical damage and poor maintenance.

**Eye protection**

Wear eye glasses with side protection according to EN 166.

**Body protection**

Wear suitable protective clothing. Remove contaminated clothing and wash it before reuse. Wash hands before breaks and after work.

**Exposure estimation and reference to its source****Workers (professional)**

SU	SU22
PROC	PROC13
Assessment method	inhalation, long-term - local and systemic
Exposure assessment	55,08 mg/m <sup>3</sup>
Exposure assessment (method)	ECETOC TRA

Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

Risk characterisation ratio (RCR) 0,2  
Lead substance 2-methoxy-1-methylethyl acetate

**Workers (professional)**

SU SU22  
PROC PROC13  
Assessment method dermal, long-term - local and systemic  
Exposure assessment 13,71 mg/kg/d  
Exposure assessment (method) ECETOC TRA  
Risk characterisation ratio (RCR) 0,09  
Lead substance 2-methoxy-1-methylethyl acetate

**Workers (professional)**

SU SU22  
PROC PROC10  
Assessment method inhalation, long-term - local and systemic  
Exposure assessment 137,71 mg/m<sup>3</sup>  
Exposure assessment (method) ECETOC TRA  
Risk characterisation ratio (RCR) 0,5  
Lead substance 2-methoxy-1-methylethyl acetate

**Workers (professional)**

SU SU22  
PROC PROC10  
Assessment method dermal, long-term - local and systemic  
Exposure assessment 27,43 mg/kg/d  
Exposure assessment (method) ECETOC TRA  
Risk characterisation ratio (RCR) 0,18  
Lead substance 2-methoxy-1-methylethyl acetate

**Workers (professional)**

SU SU22  
PROC PROC11  
Assessment method inhalation, long-term - local and systemic  
Indoor use  
Exposure assessment 27,54 mg/m<sup>3</sup>  
Exposure assessment (method) ECETOC TRA  
Risk characterisation ratio (RCR) 0,1  
Lead substance 2-methoxy-1-methylethyl acetate

**Workers (professional)**

SU SU22  
PROC PROC11  
Assessment method dermal, long-term - local and systemic  
Indoor use  
Exposure assessment 2,14 mg/kg/d  
Exposure assessment (method) ECETOC TRA  
Risk characterisation ratio (RCR) 0,01  
Lead substance 2-methoxy-1-methylethyl acetate

**Workers (professional)**

SU SU22  
PROC PROC11  
Assessment method inhalation, long-term - local and systemic  
Outdoor use  
Exposure assessment 55,08 mg/m<sup>3</sup>  
Exposure assessment (method) ECETOC TRA

Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

Risk characterisation ratio (RCR)	0,2
Lead substance	2-methoxy-1-methylethyl acetate
<b>Workers (professional)</b>	
SU	SU22
PROC	PROC11
Assessment method	dermal, long-term - local and systemic
Exposure assessment	Outdoor use
Exposure assessment (method)	107,14 mg/kg/d
Risk characterisation ratio (RCR)	ECETOC TRA
Lead substance	0,7
SU	2-methoxy-1-methylethyl acetate
Assessment method	SU21
Exposure assessment	dermal, long-term - systemic
Exposure assessment (method)	Indoor use
Risk characterisation ratio (RCR)	6 mg/kg/d
Lead substance	ConsExpo v4.1
SU	0,11
Assessment method	2-methoxy-1-methylethyl acetate
Exposure assessment	SU21
Exposure assessment (method)	inhalation, long-term - systemic
Risk characterisation ratio (RCR)	Indoor use
Lead substance	6,83 mg/m <sup>3</sup>
SU	ConsExpo v4.1
Assessment method	0,6
Exposure assessment	2-methoxy-1-methylethyl acetate
Exposure assessment (method)	
Risk characterisation ratio (RCR)	
Lead substance	
<b>Workers (professional)</b>	
SU	SU22
PROC	PROC11
Assessment method	inhalation, long-term - local and systemic
Exposure assessment	Indoor use
Exposure assessment (method)	242 mg/m <sup>3</sup>
Risk characterisation ratio (RCR)	ECETOC TRA
Lead substance	0,504
SU	isobutyl acetate
Assessment method	
Exposure assessment	
Exposure assessment (method)	
Risk characterisation ratio (RCR)	
Lead substance	
<b>Workers (professional)</b>	
SU	SU22
PROC	PROC11
Assessment method	inhalation, long-term - local and systemic
Exposure assessment	Outdoor use
Exposure assessment (method)	242 mg/m <sup>3</sup>
Risk characterisation ratio (RCR)	ECETOC TRA
Lead substance	0,504
SU	isobutyl acetate
Assessment method	
Exposure assessment	
Exposure assessment (method)	
Risk characterisation ratio (RCR)	
Lead substance	
<b>Workers (professional)</b>	
SU	SU22
PROC	PROC11
Assessment method	Long-term inhalative
Exposure assessment	242 mg/m <sup>3</sup>
Exposure assessment (method)	ECETOC TRA
Risk characterisation ratio (RCR)	0,504

Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

Lead substance	n-butyl acetate
<b>Workers (professional)</b>	
SU	SU22
PROC	PROC11
Assessment method	inhalation, long-term - systemic Indoor use
Exposure assessment	0,002 mg/m <sup>3</sup>
Exposure assessment (method)	EASY TRA v3.5
Risk characterisation ratio (RCR)	0,003
Lead substance	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol
<b>Workers (professional)</b>	
SU	SU22
PROC	PROC11
Assessment method	dermal, long-term - systemic Indoor use
Exposure assessment	0,257 mg/kg/d
Exposure assessment (method)	EASY TRA v3.5
Risk characterisation ratio (RCR)	0,857
Lead substance	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol
<b>Workers (professional)</b>	
SU	SU22
PROC	PROC10
Assessment method	inhalation, long-term - systemic Indoor use
Exposure assessment	0,0004 mg/m <sup>3</sup>
Exposure assessment (method)	EASY TRA v3.5
Risk characterisation ratio (RCR)	0,0006
Lead substance	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol
<b>Workers (professional)</b>	
SU	SU22
PROC	PROC10
Assessment method	dermal, long-term - systemic Indoor use
Exposure assessment	0,1097 mg/kg/d
Exposure assessment (method)	EASY TRA v3.5
Risk characterisation ratio (RCR)	0,366
Lead substance	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol
<b>Workers (professional)</b>	
SU	SU22
PROC	PROC11
Assessment method	inhalation, long-term - systemic Outdoor use
Exposure assessment	0,0007 mg/m <sup>3</sup>
Exposure assessment (method)	EASY TRA v3.5
Risk characterisation ratio (RCR)	0,001
Lead substance	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol
<b>Workers (professional)</b>	
SU	SU22
PROC	PROC11
Assessment method	dermal, long-term - systemic Outdoor use

Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

Exposure assessment 0,214 mg/kg/d  
 Exposure assessment (method) EASY TRA v3.5  
 Risk characterisation ratio (RCR) 0,714  
 Lead substance 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol

**Workers (professional)**

SU SU22  
 PROC PROC10  
 Assessment method inhalation, long-term - systemic  
 Outdoor use

Exposure assessment 0,001 mg/m<sup>3</sup>  
 Exposure assessment (method) EASY TRA v3.5  
 Risk characterisation ratio (RCR) 0,002  
 Lead substance 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol

**Workers (professional)**

SU SU22  
 PROC PROC10  
 Assessment method dermal, long-term - systemic  
 Outdoor use

Exposure assessment 0,1097 mg/kg/d  
 Exposure assessment (method) EASY TRA v3.5  
 Risk characterisation ratio (RCR) 0,366  
 Lead substance 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol

**Workers (professional)**

SU SU22  
 PROC PROC10  
 Assessment method inhalation, long-term - systemic  
 Risk characterisation ratio (RCR) 0,5

Lead substance 4-methylpentan-2-one

**Workers (professional)**

SU SU22  
 PROC PROC10  
 Assessment method dermal, long-term - systemic  
 Risk characterisation ratio (RCR) 0,1

Lead substance 4-methylpentan-2-one

**Workers (professional)**

SU SU22  
 PROC PROC11  
 Assessment method inhalation, long-term - systemic  
 Risk characterisation ratio (RCR) 0,5

Lead substance 4-methylpentan-2-one

**Workers (professional)**

SU SU22  
 PROC PROC11  
 Assessment method dermal, long-term - systemic  
 Risk characterisation ratio (RCR) 0,5

Lead substance 4-methylpentan-2-one

**Workers (professional)**

SU SU22  
 PROC PROC13  
 Assessment method inhalation, long-term - systemic



Trade name: Hesse PU NANO-TOP DU 45544

Version: 41 / GB

Revision: 12.11.2020

Replaces Version: 40 / GB

Print date: 13.11.20

Risk characterisation ratio (RCR)	0,75
Lead substance	4-methylpentan-2-one
<b>Workers (professional)</b>	
SU	SU22
PROC	PROC13
Assessment method	dermal, long-term - systemic
Risk characterisation ratio (RCR)	0,5
Lead substance	4-methylpentan-2-one
<b>Workers (professional)</b>	
SU	SU22
PROC	PROC10
Assessment method	dermal, long-term - systemic
Exposure assessment	63 mg/kg/d
Exposure assessment (method)	ECETOC TRA
Risk characterisation ratio (RCR)	0,022
Lead substance	ethyl acetate
<b>Workers (professional)</b>	
SU	SU22
PROC	PROC10
Assessment method	inhalation, long-term - local
Exposure assessment	734 mg/m <sup>3</sup>
Exposure assessment (method)	ECETOC TRA
Risk characterisation ratio (RCR)	0,018
Lead substance	ethyl acetate
<b>Workers (professional)</b>	
SU	SU22
PROC	PROC11
Assessment method	dermal, long-term - systemic
Exposure assessment	63 mg/kg/d
Exposure assessment (method)	ECETOC TRA
Risk characterisation ratio (RCR)	0,034
Lead substance	ethyl acetate
<b>Workers (professional)</b>	
SU	SU22
PROC	PROC11
Assessment method	inhalation, long-term - local
Exposure assessment	734 mg/m <sup>3</sup>
Exposure assessment (method)	ECETOC TRA
Risk characterisation ratio (RCR)	0,018
Lead substance	ethyl acetate

## Information on estimated exposure and downstream-user guidance

### Guidance for Downstream Users

The downstream user can evaluate whether he operates within the conditions set in the exposure scenario on the basis of the information supplied. This evaluation can be conducted by an expert or using the risk assessment tools recommended by ECHA.