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

1.1 Product identifier

HENSOTHERM® 421 KS

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

1.2.1 Relevant uses

Fire retardant coating

1.2.2 Uses advised against

None known.

1.3 Details of the supplier of the safety data sheet

Company Rudolf Hensel GmbH

Lauenburger Landstr. 11 21039 Börnsen / GERMANY Phone +49 (0)40-72 10 62 10 Fax +49 (0)40-72 10 62 52 Homepage www.rudolf-hensel.de E-mail info@rudolf-hensel.de

Address enquiries to

Technical information info@rudolf-hensel.de
Safety Data Sheet sdb@chemiebuero.de

1.4 Emergency telephone number

Company +49 (0)40-72 10 62 10 (7:00 - 17:00) 0172 4115390 (17:00 - 07:00)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture [REGULATION (GB) CLP]

Repr. 2: H361f Suspected of damaging fertility.

2.2 Label elements

Hazard pictograms



Signal word WARNING
Contains: Melamine

Hazard statements H361f Suspected of damaging fertility.

Precautionary statements P201 Obtain special instructions before use.

P260 Do not breathe spray.

P280 Wear protective gloves / protective clothing / eye protection / face protection.

P308+P313 IF exposed or concerned: Get medical advice / attention.

P501 Dispose of contents/container in accordance with local/national regulation.

Special labelling Product treated with preservatives

METHYLCHLOROISOTHIAZOLINONE/METHYLISOTHIAZOLINONE (3:1).

Contains: 2-Methyl-2H-isothiazolin-3-one, Reaction mass of 2-methyl-2H-isothiazol-3-one and 5-chloro-2-methyl-2H-isothiazol-3-one. EUH208 May produce an allergic reaction.

2004/42/CE 0 g/l II A i WB One-pack performance coatings (max. 140 g/l)

2.3 Other hazards

Human health dangers Frequent persistent contact with the skin can cause skin irritation.

Contains no ingredients with endocrine-disrupting properties.

Environmental hazardsDoes not contain any PBT or vPvB substances.

Other hazards Further hazards were not determined with the current level of knowledge.



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SECTION 3: Composition / Information on ingredients

3.1 Substances

not applicable

3.2 Mixtures

The product is a mixture.

Range [%]	Substance	
3 - < 10	- < 10 Melamine	
	CAS: 108-78-1, EINECS/ELINCS: 203-615-4, Reg-No.: 01-2119485947-16-XXXX	
	GHS/CLP: Repr. 2: H361f	
< 0,02	2-Bromo-2-nitropropane-1,3-diol	
	CAS: 52-51-7, EINECS/ELINCS: 200-143-0, EU-INDEX: 603-085-00-8	
	GHS/CLP: Acute Tox. 4: H302 H312 - STOT SE 3: H335 - Skin Irrit. 2: H315 - Eye Dam. 1: H318 - Aquatic Acute 1: H400 - Aquatic Chronic 2: H411, M-Factor (acute): 10	
	Mixture: 5-chloro-2-methyl-2H- isothiazol-3-one/2-methyl-2H-isothiazol-3-one (3:1)	
	CAS: 55965-84-9, EINECS/ELINCS: 611-341-5, EU-INDEX: 613-167-00-5	
	GHS/CLP: Acute Tox. 3: H301 - Acute Tox. 2: H310 H330 - Skin Corr. 1C: H314 - Eye Dam. 1: H318 - Skin Sens. 1A: H317 - Aquatic Acute 1: H400 - Aquatic Chronic 1: H410 - EUH071, M-Factor (acute): 100, M-Factor (chronic): 100	
	SCL [%]: >=0,0015: Skin Sens. 1A: H317, >=0,6: Eye Dam. 1: H318, >=0,6: Skin Corr. 1C: H314, 0,06 - <0,6: Eye Irrit. 2: H319, 0,06 - <0,6: Skin Irrit. 2: H315	

Comment on component parts

Substances of Very High Concern - SVHC: substances are not contained or are below 0.1%.

For full text of H-statements: see SECTION 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information Take off contaminated clothing and wash before reuse.

Inhalation Ensure supply of fresh air.

In the event of symptoms seek medical treatment.

Skin contact When in contact with the skin, clean with soap and water.

Consult a doctor if skin irritation persists.

Eye contact Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy

to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

Ingestion Get medical advice.

Do not induce vomiting.

Rinse out mouth and give plenty of water to drink.

4.2 Most important symptoms and effects, both acute and delayed

Allergic reactions Irritant effects

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media Product itself is non-combustible. Fire extinguishing method of surrounding areas must be

considered.

Extinguishing media that must not

be used

Full water jet.

5.2 Special hazards arising from the substance or mixture

Risk of formation of toxic pyrolysis products.



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5.3 Advice for firefighters

Use self-contained breathing apparatus.

Fire residues and contaminated firefighting water must be disposed of in accordance within the local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

High risk of slipping due to leakage/spillage of product.

6.2 Environmental precautions

Do not discharge into the drains/surface waters/groundwater.

6.3 Methods and material for containment and cleaning up

Pick up with absorbent material (e.g. sand, sawdust, universal absorbent, diatomaceous

Dispose of absorbed material in accordance within the regulations.

6.4 Reference to other sections

See SECTION 8+13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

The normal safety precautions for handling chemicals must be observed.

Use only in well-ventilated areas.

Provide suitable vacuuming at the processing area.

Do not eat, drink, smoke or take drugs at work.

After worktime and before work breaks the affected skin areas must be thoroughly cleaned.

Use barrier skin cream.

Take off contaminated clothing and wash before reuse.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in original container. Prevent penetration into the ground.

Do not store together with food and animal food/diet.

Keep container tightly closed. Protect from heat/overheating.

Keep in a cool place. Store in a dry place.

7.3 Specific end use(s)

See product use, SECTION 1.2



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SECTION 8: Exposure controls / personal protection

8.1 Control parameters

Ingredients with occupational exposure limits to be monitored (GB)

Substance		
Titanium dioxide		
CAS: 13463-67-7, EINECS/ELINCS: 236-675-5, Reg-No.: 01-2119489379-17-XXXX		
Long-term exposure: 4 mg/m³, respirable; total inhalable: TWA=10 mg/m³		
Pentaerythritol		
CAS: 115-77-5, EINECS/ELINCS: 204-104-9, Reg-No.: 01-2119473985-20-XXXX		
Long-term exposure: 10 mg/m³, inhalable dust, respirable dust: TWA=4 mg/m³		
Short-term exposure (15-minute): 20 mg/m³		

DNEL

Substance		
Melamine, CAS: 108-78-1		
Industrial, dermal, Long-term - systemic effects, 11,8 mg/kg		
Industrial, inhalative, Long-term - systemic effects, 8,3 mg/m³		
Industrial, inhalative, Acute - systemic effects, 82,3 mg/m³		
Industrial, dermal, Acute - systemic effects, 117 mg/kg		
general population, oral, Long-term - systemic effects, 0,42 mg/kg		
general population, dermal, Long-term - systemic effects, 4,2 mg/kg		
general population, inhalative, Long-term - systemic effects, 1,5 mg/m ³		

PNEC

Substance		
Melamine, CAS: 108-78-1		
sewage treatment plants (STP), 200 mg/L		
oral (food), 22 mg/kg		
soil, 1,6 mg/kg		
sediment (seawater), 0,55 mg/kg		
sediment (freshwater), 5,5 mg/kg		
seawater, 0,051 mg/L		
freshwater, 0,51 mg/L		



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8.2 **Exposure controls**

Additional advice on system design Ensure adequate ventilation on workstation.

Measurement methods for taking workplace measurements must meet the performance

requirements of DIN EN 482. For example, recommendations are given in the IFA's list of

hazardous substances.

Eye protection Safety glasses. (EN 166:2001)

Hand protection 0,7mm Butyl rubber, >480 min (EN 374-1/-2/-3).

The details concerned are recommendations. Please contact the glove supplier for further

information.

Skin protection Protective clothing (EN 340)

Other Avoid contact with eyes and skin.

Do not inhale aerosols.

Personal protective equipment should be selected specifically for the working place, depending on concentration and quantity handled. The resistance of this equipment to

chemicals should be ascertained with the respective supplier.

Avoid contact during pregnancy/ while nursing.

Respiratory protection In the event of occupational exposure limits being exceeded or of inadequate ventilation: wear

appropriate respiratory protection.

Short term: filter apparatus, filter P2. (DIN EN 143)

Thermal hazards not applicable

Delimitation and monitoring of the

environmental exposition

Odor

Protect the environment by applying appropriate control measures to prevent or limit

emissions

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state pasty Color white

characteristic **Odour threshold** not applicable pH-value 7,7 - 8,7 pH-value [1%] not determined Boiling point [°C] not determined Flash point [°C] not applicable Flammability (solid, gas) [°C] not applicable Lower explosion limit not applicable **Upper explosion limit** not applicable

Oxidising properties

Vapour pressure/gas pressure [kPa] not determined

Density [g/cm³] 1,3 - 1,4 (20 °C / 68,0 °F)

Relative density not determined Bulk density [kg/m³] not applicable Solubility in water miscible Solubility other solvents not applicable Partition coefficient [n-octanol/water] not determined

Kinematic viscosity 10000 - 14000 mPa.s (20°C)

not applicable Relative vapour density **Evaporation speed** not applicable Melting point [°C] not determined **Auto-ignition temperature** not self-igniting Decomposition temperature [°C] not determined Particle characteristics not applicable

Safety Data Sheet (UK REACH) (GB) HENSOTHERM® 421 KS



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9.2 Other information

none

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reactions known if used as directed.

10.2 Chemical stability

The product is stable under standard conditions.

10.3 Possibility of hazardous reactions

No hazardous reactions known.

10.4 Conditions to avoid

See SECTION 7.2.

10.5 Incompatible materials

not applicable

10.6 Hazardous decomposition products

No hazardous decomposition products known.



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SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute oral toxicity

Product

ATE-mix, oral, > 2000 mg/kg

Substance

Melamine, CAS: 108-78-1

LD50, oral, Rat (male), 3161 mg/kg

LD50, oral, Rat (female), 3828 mg/kg

2-Bromo-2-nitropropane-1,3-diol, CAS: 52-51-7

LD50, oral, Rat, 193 mg/kg

Mixture: 5-chloro-2-methyl-2H- isothiazol-3-one/2-methyl-2H-isothiazol-3-one (3:1), CAS: 55965-84-9

LD50, oral, 64 mg/kg (ECHA, CLH Report)

LD50, oral, Rat, 53 mg/kg

Acute dermal toxicity

Product

ATE-mix, dermal, > 2000 mg/kg

Substance

Melamine, CAS: 108-78-1

LD50, dermal, Rat, > 2000 mg/kg

2-Bromo-2-nitropropane-1,3-diol, CAS: 52-51-7

LD50, dermal, Rat, 2000 mg/kg

Mixture: 5-chloro-2-methyl-2H- isothiazol-3-one/2-methyl-2H-isothiazol-3-one (3:1), CAS: 55965-84-9

LD50, dermal, Rabbit, 87,12 mg/kg (ECHA, CLH Report)

Acute inhalational toxicity

Product

ATE-mix, inhalativ (mist), > 5 mg/l 4h

Substance

Melamine, CAS: 108-78-1

LC50, inhalative, Rat, 5,19 mg/l, OECD 403, 4h

Mixture: 5-chloro-2-methyl-2H- isothiazol-3-one/2-methyl-2H-isothiazol-3-one (3:1), CAS: 55965-84-9

LC50, inhalative, Rat, 0,171 mg/l/4h (ECHA, CLH Report)

Serious eye damage/irritation

Does not contain a relevant substance that meets the classification criteria. Based on the available information, the classification criteria are not fulfilled. Toxicological data of complete product are not available.

Substance

Mixture: 5-chloro-2-methyl-2H- isothiazol-3-one/2-methyl-2H-isothiazol-3-one (3:1), CAS: 55965-84-9

Harmonised classification: Eye Dam. 1 H318

Skin corrosion/irritation

Does not contain a relevant substance that meets the classification criteria. Based on the available information, the classification criteria are not fulfilled. Toxicological data of complete product are not available.

Substance



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Melamine, CAS: 108-78-1

Rabbit, OECD 404, non-irritating

Mixture: 5-chloro-2-methyl-2H- isothiazol-3-one/2-methyl-2H-isothiazol-3-one (3:1), CAS: 55965-84-9

Harmonised classification: Skin Corr. 1C H314

Respiratory or skin sensitisation

Based on the available information, the classification criteria are not fulfilled.

Toxicological data of complete product are not available.

Substance

Melamine, CAS: 108-78-1

Guinea pig, OECD 406, non-sensitizing

Mixture: 5-chloro-2-methyl-2H- isothiazol-3-one/2-methyl-2H-isothiazol-3-one (3:1), CAS: 55965-84-9

Harmonised classification: Skin Sens. 1A H317

Specific target organ toxicity —

single exposure

Does not contain a relevant substance that meets the classification criteria. Based on the available information, the classification criteria are not fulfilled.

Toxicological data of complete product are not available.

Specific target organ toxicity —

repeated exposure

Does not contain a relevant substance that meets the classification criteria. Based on the available information, the classification criteria are not fulfilled.

Toxicological data of complete product are not available.

Mutagenicity Does not contain a relevant substance that meets the classification criteria.

Based on the available information, the classification criteria are not fulfilled.

Toxicological data of complete product are not available.

Reproduction toxicity Suspected of damaging fertility.

Based on the available information, the classification criteria are fulfilled.

Toxicological data of complete product are not available.

Calculation method

Substance

Melamine, CAS: 108-78-1

NOAEL, 833 mg/kg, OECD 443, positive

Carcinogenicity Does not contain a relevant substance that meets the classification criteria.

Based on the available information, the classification criteria are not fulfilled.

Toxicological data of complete product are not available.

Aspiration hazard

Does not contain a relevant substance that meets the classification criteria.

General remarks

none

11.2 Information on other hazards

Endocrine disrupting properties

Contains no ingredients with endocrine-disrupting properties.

Other information



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SECTION 12: Ecological information

12.1 Toxicity

Substance

Melamine, CAS: 108-78-1

LC50, (96h), Oncorhynchus kisutch, > 3000 mg/L

EC50, (48h), Daphnia magna, 200 mg/L EPA OPP 72-2

NOEC, (21d), Daphnia magna, >= 11 mg/L OECD 211

ErC50, (96h), Pseudokirchneriella subcapitata, 325 mg/L PRO/FT Algae-AC090-6

Mixture: 5-chloro-2-methyl-2H- isothiazol-3-one/2-methyl-2H-isothiazol-3-one (3:1), CAS: 55965-84-9

LC50, (96h), Oncorhynchus mykiss, 0,19 mg/l

EC50, (48h), Daphnia magna, 0,18 mg/l

ErC50, Skeletonema costatum, 0,003 mg/l

12.2 Persistence and degradability

Behaviour in environment

compartments

not determined

Behaviour in sewage plant not determined
Biological degradability not determined

12.3 Bioaccumulative potential

Accumulation in organisms is not expected.

12.4 Mobility in soil

Spillages may penetrate the soil causing ground water contamination.

12.5 Results of PBT and vPvB assessment

Based on all available information not to be classified as PBT or vPvB respectively.

12.6 Endocrine disrupting properties

Contains no ingredients with endocrine-disrupting properties.

12.7 Other adverse effects

None known.



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SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. It is not possible to determine a waste code for this product in accordance with the European Waste Catalogue (EWC) since it is only possible to classify it according to how it is used by the customer. The waste code is to be determined within the EU in liaison with the waste-disposal operator.

Product

Coordinate disposal with the authorities if necessary.

Dispose of as hazardous waste.

080119* Waste no. (recommended)

Contaminated packaging

Packaging that cannot be cleaned should be disposed of as for product.

Uncontaminated packaging may be taken for recycling.

Waste no. (recommended) 150110* packaging containing residues of or contaminated by hazardous substances

150102

SECTION 14: Transport information

14.1 UN number or ID number

Transport by land according to

ADR/RID

not applicable

Inland navigation (ADN) not applicable

Marine transport in accordance with

IMDG

Air transport in accordance with IATA not applicable

14.2 UN proper shipping name

Transport by land according to

ADR/RID

NO DANGEROUS GOODS

Inland navigation (ADN) NO DANGEROUS GOODS

IMDG

Marine transport in accordance with NOT CLASSIFIED AS "DANGEROUS GOODS"

Air transport in accordance with IATA NOT CLASSIFIED AS "DANGEROUS GOODS"

14.3 Transport hazard class(es)

Transport by land according to

ADR/RID

not applicable

Inland navigation (ADN) not applicable

Marine transport in accordance with

IMDG

not applicable

Air transport in accordance with IATA not applicable



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14.4 Packing group

Transport by land according to

ADR/RID

not applicable

Inland navigation (ADN)

not applicable

Marine transport in accordance with

IMDG

not applicable

Air transport in accordance with IATA not applicable

14.5 Environmental hazards

Transport by land according to

ADR/RID

no

no

Inland navigation (ADN)

Marine transport in accordance with no IMDG

Air transport in accordance with IATA no

14.6 Special precautions for user

Relevant information under SECTION 6 to 8.

14.7 Maritime transport in bulk according to IMO instruments

not applicable

SECTION 15: Regulatory information

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

EEC-REGULATIONS 2008/98/EC 2000/532/EC); 2010/75/EU; 2004/42/EC; (EC) 648/2004; (EC) 1907/2006

(REACH); (EU) 1272/2008; 75/324/EEC ((EC) 2016/2037); (EU) 2020/878; (EU) 2016/131;

(EU) 517/2014

TRANSPORT-REGULATIONS ADR (2021); IMDG-Code (2021, 40. Amdt.); IATA-DGR (2021)

NATIONAL REGULATIONS (GB): EH40/2005 Workplace exposure limits (Second edition, published December 2011); UK

REACH; GB CLP.

- Observe employment restrictions

for people

- VOC (2010/75/CE)

Observe employment restrictions for mothers-to-be and nursing mothers. Observe

employment restrictions for young people.

15.2 Chemical safety assessment

not applicable

0 %



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SECTION 16: Other information

16.1 Hazard statements (SECTION 3)

H411 Toxic to aquatic life with long lasting effects.

H315 Causes skin irritation.

H335 May cause respiratory irritation.

H302+H312 Harmful if swallowed or in contact with skin.

H361f Suspected of damaging fertility. EUH071 Corrosive to the respiratory tract.

H410 Very toxic to aquatic life with long lasting effects.

H400 Very toxic to aquatic life.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H314 Causes severe skin burns and eye damage.

H310+H330 Fatal in contact with skin or if inhaled.

H301 Toxic if swallowed.

16.2 Abbreviations and acronyms:

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route

RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses

ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure

ATE = acute toxicity estimate

CAS = Chemical Abstracts Service

CLP = Classification, Labelling and Packaging

DMEL = Derived Minimum Effect Level

DNEL = Derived No Effect Level

EC50 = Median effective concentration

ECB = European Chemicals Bureau

EEC = European Economic Community

EINECS = European Inventory of Existing Commercial Chemical Substances

EL50 = Median effective loading

ELINCS = European List of Notified Chemical Substances

EmS = Emergency Schedules

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

IATA = International Air Transport Association

IBC-Code = International Code for the Construction and Equipment of Ships carrying

Dangerous Chemicals in Bulk

IC50 = Inhibition concentration, 50%

IMDG = International Maritime Code for Dangerous Goods

IUCLID = International Uniform Chemical Information Database

IVIS = In vitro irritation score

LC50 = Lethal concentration, 50%

LD50 = Median lethal dose

LC0 = lethal concentration, 0%

LOAEL = lowest-observed-adverse-effect level

LL50 = Median lethal loading

LQ = Limited Quantities

MARPOL = International Convention for the Prevention of Marine Pollution from Ships

NOAEL = No Observed Adverse Effect Level

NOEC = No Observed Effect Concentration

PBT = Persistent, Bioaccumulative and Toxic substance

PNEC = Predicted No-Effect Concentration

REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals

STP = Sewage Treatment Plant

TLV®/TWA = Threshold limit value – time-weighted average

TLV®STEL = Threshold limit value - short-time exposure limit

VOC = Volatile Organic Compounds

vPvB = very Persistent and very Bioaccumulative

16.3 Other information

Classification procedure

Repr. 2: H361f Suspected of damaging fertility. (Calculation method)



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Modified position

SECTION 3 been added: 2-Bromo-2-nitropropane-1,3-diol

SECTION 3 been added: Melamine

SECTION 2 been added: P280 Wear protective gloves / protective clothing / eye protection /

face protection.

SECTION 2 been added: Repr. 2 SECTION 2 been added: health hazard SECTION 2 been added: WARNING

SECTION 2 been added: H361f Suspected of damaging fertility.
SECTION 2 been added: P201 Obtain special instructions before use.
SECTION 2 deleted: EUH210 Safety data sheet available on request.

SECTION 2 been added: P501 Dispose of contents/container in accordance with

local/national regulation.

SECTION 2 been added: P260 Do not breathe spray.

SECTION 2 been added: P308+P313 IF exposed or concerned: Get medical advice /

attention.

SECTION 5 been added: Risk of formation of toxic pyrolysis products.

SECTION 8 been added: Avoid contact during pregnancy/ while nursing.

SECTION 13 been added: Dispose of as hazardous waste.

SECTION 15 been added: Observe employment restrictions for mothers-to-be and nursing

mothers. Observe employment restrictions for young people.

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