Safety Data Sheet

according to Regulation (EC) No 1907/2006

VERSTÄRKER 220 NE.K.

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

1.1. Product identifier

VERSTÄRKER 220 NE.K.

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

Use of the substance/mixture

Hardener

1.3. Details of the supplier of the safety data sheet

Company name:	RUDOL-FABRIK Hermann Hagemeier	
Street:	Sürther Str. 172	
Place:	D-50321 Brühl	
Post-office box:	17 04 D-50307 Brühl	
Telephone:	02232-94592-0	Telefax: 02232-945929
Contact person:	Klaus Markus	
Responsible Department:	Labor	

1.4. Emergency telephone number:

02232-945920

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Hazard categories:
Flammable liquid: Flam. Liq. 2
Acute toxicity: Acute Tox. 4
Serious eye damage/eye irritation: Eye Irrit. 2
Respiratory or skin sensitisation: Resp. Sens. 1
Respiratory or skin sensitisation: Skin Sens. 1
Specific target organ toxicity - single exposure: STOT SE 3
Hazard Statements:
Highly flammable liquid and vapour.
Harmful if inhaled.
Causes serious eye irritation.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
May cause drowsiness or dizziness.

2.2. Label elements

Regulation (EC) No. 1272/2008

Signal word: Danger

Pictograms:



Hazard statements

H225	Highly flammable liquid and vapour.
H332	Harmful if inhaled.
H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317	May cause an allergic skin reaction.

H336 May cause drowsiness or dizziness.

Precautionary statements

P403+P235 Store in a well-ventilated place. Keep cool.
P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P304+P312 IF INHALED: Call a POISON CENTER or doctor/physician if you feel unwell.
P340 Remove person to fresh air and keep comfortable for breathing.
P284 Wear respiratory protection.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

Special labelling of certain mixtures

EUH066 Repeated exposure may cause skin dryness or cracking.

Additional advice on labelling

Labelling in accordance with the EEC directives:

2.3. Other hazards

In use, may form flammable/explosive vapour-air mixture.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical characterization

polyisocyanate solution

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	GHS Classification			
141-78-6	Ethylacetat			65 - < 70 %
	205-500-4	607-022-00-5		
	Flam. Liq. 2, Eye Irrit. 2, STOT SE 3; H225 H319 H336 EUH066			
26471-62-5	m-Tolylidendiisocyanat			< 1 %
	247-722-4	615-006-00-4		
	Carc. 2, Acute Tox. 2, Skin Irrit. 2, Eye Irrit. 2, Resp. Sens. 1, Skin Sens. 1, STOT SE 3, Aquatic Chronic 3; H351 H330 H315 H319 H334 H317 H335 H412			

Full text of H and EUH statements: see section 16.

Specific concentration limits and M-factors

CAS No	EC No	Chemical name	Quantity
	Specific concentration limits and M-factors		
26471-62-5	247-722-4	m-Tolylidendiisocyanat	< 1 %
	Resp. Sens. 1; H334: >= 0,1 - 100		

Further Information

Dieses Produkt enthält keine äußerst besorgniserregenden Stoffe nach REACH-Verordnung Nr. 1907/2006, Artikel 57.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Take off contaminated clothing and shoes immediately.

After inhalation

In the case of inhalation of aerosol/mist consult a physician if necessary.

After contact with skin

After contact with skin, wash immediately with plenty of .?

After ingestion

NICHT zum Erbrechen bringen.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Dry chemical Carbon dioxide (CO2) Extinguishing media - large fires Water spray mist or foam. In the event of fire and/or explosion do not breathe fumes.

Unsuitable extinguishing media

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

5.2. Special hazards arising from the substance or mixture

In case of fire, formation of carbon monoxide, nitrogen oxide, isocyanate vapour, and traces of hydrogen cyanide is possible.

5.3. Advice for firefighters

In the event of fire, wear self-contained breathing apparatus.

Additional information

Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment.

6.2. Environmental precautions

Prevent product from entering drains.

6.3. Methods and material for containment and cleaning up

Remove mechanically; cover remainders with wet, absorbent material (e.g. sawdust, chemical binder based on calcium silicate hydrate, sand). After approx. one hour transfer to waste container and do not seal (evolution of CO2 !). Keep damp in a safe ventilated area for several days. For further disposal measures see chapter 13.

6.4. Reference to other sections

Remove all sources of ignition. Keep people away from and upwind of spill/leak.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Ensure adequate ventilation or exhaust ventilation in the working area. Exhaust ventilation necessary if product is sprayed. Avoid contact with skin and eyes.

Advice on protection against fire and explosion

Keep away from heat and sources of ignition.

Further information on handling

In all areas where isocyanate aerosole and/ or vapour concentrations are produced in elevated concentrations, exhaust ventilation must be provided in such a way that the occupational exposure limit (OEL) is not exceeded. The air should be drawn away from the personnel handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep containers tightly closed in a cool, well-ventilated place.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m³	fibres/ml	Category	Origin
141-78-6	Ethyl acetate	200	734		TWA (8 h)	WEL
		400	1468		STEL (15 min)	WEL

8.2. Exposure controls

Appropriate engineering controls

Stoff	CAS-Nr.	Basis	Typ	Wert	Spitzenbegrenzungswert
Ethylacetat	141-78-6	TRGS 900	AGW	400 ppm 1.500 mg/m3	2
2,4-Diisocyanat-toluol	584-84-9	TRGS 900	AGW	0,005 ppm 0,035 mg/m3	=4=
2,6-Diisocyanat-toluol	91-08-7	TRGS 900	AGW	0,005 ppm 0,035 mg/m3	=4=

Protective and hygiene measures

Wear suitable gloves and eye/face protection. Wash hands before breaks and at the end of workday. Remove and wash contaminated clothing before re-use. Keep away from food and drink.

Eye/face protection

Safety glasses

Skin protection

Wash hands before breaks and at the end of workday.

Respiratory protection

Respiratory protection required in insufficiently ventilated working areas and during spraying . An air-fed mask, or for short periods of work, a combination of charcoal filter and particulate filter is recommended.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	liquid
Colour:	colourless
Odour:	solvent

Changes in the physical state

Initial boiling point and boiling range:	77 °C
Flash point:	- 4 °C
Lower explosion limits:	2,2 vol. %
Upper explosion limits:	11,5 vol. %
Ignition temperature:	460 °C
Vapour pressure: (at 20 °C)	97 hPa
Vapour pressure: (at 50 °C)	ca. 228 hPa
Density (at 20 °C):	1,01 g/cm³

Water solubility: (at 20 °C)	reacts with water

Solubility in other solvents

Acetone, ethyl acetate

Viscosity / dynamic: (at 20 °C)	3 mPa·s
Solvent content:	65%

SECTION 10: Stability and reactivity

10.2. Chemical stability

Stable under recommended storage conditions.

10.4. Conditions to avoid

Container can be pressurized by carbon dioxide due to reaction with humid air and/or water.

10.5. Incompatible materials

Hazardous reactions: Exothermic reactio with amines, alcohols, acide and alkali. Reacts with water forming CO2. Closed containers may rupture owing to increase of pressure.

10.6. Hazardous decomposition products

No dangerous reaction known under conditions of normal use.

Further information

Reagiert mit Wasser unter CO2-Bildung. Risk of receptacle bursting. durch pressure build-up
Unter Druck stehende Gebinde vorsichtig öffnen und entspannen.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Akute Toxiziät oral
Diisocyanat-toluol (Isomerengemisch)
LD50 Ratte, männlich: 5.110 mg/kg
LD50 Ratte, weiblich: 4.130 mg/kg

Ethylacetat
LD50 Ratte: 5.620 mg/kg

Akute Toxzität, dermal
Diisocyanat-toluol (Isomerengemisch)
LD50 Kaninchen: >9400 mg/kg

Ethylacetat
LD50 Kaninchen: >5.000 mg/kg

Akute Toxizität, inhalativ
Diisocyanat-toluol (Isomerengemisch)
LC50 Ratte: 101 mg/m3, 4 h
Testsubstanz: (als Aerosol)
Konzentration des gesättigten Dampfes von 2,4-/2,6-TDI bei 25°C: 255 mg/m³

Ethylacetat
LC50 Ratte: 29,3 - 58,6 mg/l, 4 h

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
26471-62-5	m-Tolylidendiisocyanat				
	inhalation vapour	ATE 0,5 mg/l			
	inhalation aerosol	ATE 0,05 mg/l			

Irritation and corrosivity

Primäre Hautreizwirkung
Diisocyanat-toluol (Isomerengemisch)
Kaninchen Ergebnis: mäßig reizend

Ethylacetat
Kaninchen Ergebnis: nicht reizend
Bei längerer Berührung mit der Haut sind Gerb- und Reizeffekte möglich.

Primäre Schleimhautreizwirkung
Diisocyanat-toluol (Isomerengemisch)
Kaninchen Ergebnis: stark reizend

Ethylacetat
Kaninchen Ergebnis: nicht reizend

Sensitising effects

Sensibilisierung
Diisocyanat-toluol (Isomerengemisch)

Sensibilisierung durch Einatmen und Hautkontakt möglich.

Hautsensibilisierung nach Magnusson/Kligman (Maximierungstest):
Meerschweinchen Ergebnis: positiv

Ethylacetat
Meerschweinchen Ergebnis: negativ

Carcinogenic/mutagenic/toxic effects for reproduction

Gentoxizität in vitro
Ethylacetat Ergebnis: negativ

Additional information on tests

Diisocyanat-toluol (Isomerengemisch)
Bei längerer Berührung mit der Haut sind Gerb- und Reizeffekte möglich.

Ethylacetat
Dämpfe können Schläfrigkeit und Benommenheit verursachen.

SECTION 12: Ecological information

12.1. Toxicity

Oekotoxikologische Untersuchungen an der Zubereitung liegen nicht vor.

12.2. Persistence and degradability

Biologische Abbaubarkeit
Diisocyanat-toluol (Isomerengemisch)
0 % 28 d, d.h. nicht abbaubar Methode: OECD 302 C

Ethylacetat
100 % 28 d, d.h. leicht abbaubar
Methode: 301 D

12.3. Bioaccumulative potential

Toxizität gegenüber Fischen
Diisocyanat-toluol (Isomerengemisch)
LC50 > 100 mg/l Testspezies: Brachydaniorerio Prüfdauer: 96 h
Methode: OECD TG 203

Ethylacetat
LC50 431 mg/l Testspezies: Brachydanio rerio Prüfdauer: 96 h

Akute Daphnientoxizitä
Diisocyanat-toluol (Isomerengemisch)
EC50 12,5 mg/l Testspezies: Daphnia magna Prüfdauer: 48 h
Methode: OECD TG 202

Ethylacetat
EC50 717 mg/l Teststspezies: Daphnia magna Prüfdauer: 48 h

Akute Bakterientoxizität
Diisocyanat-toluol (Isomerengemisch)
EC50 > 100 mg/l Geprüft an: Belebtschlamm Prüfdauer: 3 h
Methode:

209

Ethylacetat
EC10 2.900 mg/l Geprüft an: Pseudomonas putida Prüfdauer: 16 h

Akute Algentoxizität
Diisocyanat-toluol (Isomerengemisch)
EC50 3.230 mg/l Geprüft an: Skeletonema costatum Prüfdauer: 96 h
Methode: OECD TG 201

Ethylacetat
EC50 17,9 mg/l Geprüft an: Desmodesmus subspicatus Prüfdauer: 96 hj

Further information

The resin reacts with water at the interface forming CO2 and a solid insoluble product with high melting point (polyurea). This reaction is accelerated by surfactants (e.g. detergents) or by watersoluble solvents.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

List of Wastes Code - residues/unused products

080409 WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS; wastes from MFSU of adhesives and sealants (including waterproofing products); waste adhesives and sealants containing organic solvents or other hazardous substances; hazardous waste

Contaminated packaging

After final product withdrawal, all residues must be removed from containers (drip-free, powder-free or paste-free). Once the product residues adhering to the walls of the containers have been rendered harmless, the product and hazard labels must be invalidated. Containers must be recycled in compliance with national legislation and environmental regulations.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number:	UN 1866
14.2. UN proper shipping name:	Resins in solution
14.3. Transport hazard class(es):	3
14.4. Packing group:	II
Hazard label:	3
Hazard No:	33
Tunnel restriction code:	D/E

Other applicable information (land transport)

Highly flammable, flash point -4 °C. Keep dry. Avoid heat above +50 °C.
Keep away from foodstuffs, acids and alkalis.

Marine transport (IMDG)

14.1. UN number:	UN 1866
14.3. Transport hazard class(es):	3
14.4. Packing group:	II
Hazard label:	3
Marine pollutant:	no
EmS:	F-E, S-E

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number:	UN 1866
14.3. Transport hazard class(es):	3
14.4. Packing group:	II
Hazard label:	3
IATA-packing instructions - Passenger:	353
IATA-max. quantity - Passenger:	5 L
IATA-packing instructions - Cargo:	364
IATA-max. quantity - Cargo:	60 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

Other applicable information

Highly flammable, flash point -4 °C. Keep dry. Avoid heat above +50 °C. Keep away from foodstuffs, acids and alkalis.

SECTION 15: Regulatory information

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

EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 3

2004/42/EC (VOC): 65%

National regulatory information

Water hazard class (D): 1 - slightly hazardous to water

SECTION 16: Other information

Changes

Das Produkt wird hauptsächlich als Härter in Beschichtungsmaterialien oder Klebstoffen verwendet. Der Umgang mit Beschichtungsmaterialien oder Klebstoffen, die reaktive Polyisocyanate und Restgehalte an monomerem TDI enthalten, erfordert geeignete Schutzmaßnahmen (siehe auch dieses Sicherheitsdatenblatt).

Sie dürfen daher nur in industriellen oder beruflichen Anwendungen Verwendung finden. Für einen Einsatz in Do-it-Yourself-Anwendungen sind diese nicht geeignet.

Relevant H and EUH statements (number and full text)

H225	Highly flammable liquid and vapour.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
H412	Harmful to aquatic life with long lasting effects.
EUH066	Repeated exposure may cause skin dryness or cracking.

Further Information

All components of this product are listed in the European Inventory of Existing Commercial Substances (EINECS) under the provisions laid down in the corresponding EEC-Directive.
The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)