

**Flexonal WBC 35**

Version 4.2

Print Date 25.10.2022

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**Section 1: Identification of the substance/mixture and of the company/undertaking**

**1.1. Product identifier**

Trade name : Flexonal WBC 35  
 Substance name : N-methyl-2-pyrrolidone  
 Index-No. : 606-021-00-7  
 CAS-No. : 872-50-4  
 EC-No. : 212-828-1  
 Registration number : 01-2119472430-46-xxxx

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

Use of the Substance/Mixture : Identified use: See table in front of appendix for a complete overview of identified uses.  
 Uses advised against : At this moment we have not identified any uses advised against

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

Company : Bachmann Kunststoff Technologien GmbH  
 Rudolf-Diesel-Str. 2  
 DE 63322 Rödermark  
 Telephone : +49 (0)6074-94394  
 Telefax : +49 (0)6074-98544  
 E-mail address : service@bktgermany.com  
 Responsible/issuing person : Umwelt / Sicherheit

**1.4. Emergency telephone number**

Emergency telephone number : +49 (0)6131-19240

**Section 2: Hazards identification**

**2.1. Classification of the substance or mixture**

Classification according to Regulation (EC) No 1272/2008

REGULATION (EC) No 1272/2008			
Hazard class	Hazard category	Target Organs	Hazard statements

## Flexonal WBC 35

Reproductive toxicity	Category 1B	---	H360D
Serious eye damage/eye irritation	Category 2	---	H319
Specific target organ toxicity - single exposure	Category 3	---	H335
Skin corrosion/irritation	Category 2	---	H315

For the full text of the H-Statements mentioned in this Section, see Section 16.

### Classification according to EU Directives 67/548/EEC or 1999/45/EC

Toxic to Reproduction Category 2 (Repr.Cat.2)	R61
Irritant (Xi)	R36/37/38


For the full text of the R-phrases mentioned in this Section, see Section 16.

### Most important adverse effects

- Human Health : May cause respiratory irritation.  
 Causes skin irritation.  
 Causes serious eye damage.  
 May cause harm to the unborn child.
- Physical and chemical hazards : See section 9 for physicochemical information.
- Potential environmental effects : See section 12 for environmental information.

## 2.2. Label elements

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

- Hazard symbols : 
- Signal word : Danger
- Hazard statements : H360D May damage the unborn child.  
 H319 Causes serious eye irritation.  
 H335 May cause respiratory irritation.  
 H315 Causes skin irritation.
- Precautionary statements

## Flexonal WBC 35

Prevention	:	P201 P202  P261 P281  P280	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing vapours/spray. Use personal protective equipment as required. Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response	:	P304 + P340  P308 + P313 P305 + P351 + P338  P302 + P352	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF exposed or concerned: Get medical advice/ attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF ON SKIN: Wash with plenty of soap and water.
Storage	:	P403 + P233	Store in a well-ventilated place. Keep container tightly closed.

### Hazardous components which must be listed on the label:

- N-methyl-2-pyrrolidone

### 2.3. Other hazards

For Results of PBT and vPvB assessment see section 12.5.

## Section 3: Composition/information on ingredients

### 3.1. Substances

Hazardous components	Amount [%]	Classification (REGULATION (EC) No 1272/2008)		Classification (67/548/EEC)
		Hazard class / Hazard category	Hazard statements	
<b>N-methyl-2-pyrrolidone</b>				
Index-No. : 606-021-00-7	<= 100	Skin Irrit.2	H315	Repr.Cat.2; R61 Irritant; Xi; R36/37/38
CAS-No. : 872-50-4		Eye Irrit.2	H319	
EC-No. : 212-828-1		Repr.1B	H360D	
Registration : 01-2119472430-46-xxxx		STOT SE3	H335	
C&L-No. : 02-2119752459-27-0000				

Remarks : This product contains a substance included on the candidate list according to article 59 (1, 10) of regulation EC No. 1907/2006 ('REACH')

## Flexonal WBC 35

in a concentration  $\geq 0.1\%$  w/w.

For the full text of the R-phrases mentioned in this Section, see Section 16.  
 For the full text of the H-Statements mentioned in this Section, see Section 16.

### Section 4: First aid measures

#### 4.1. Description of first aid measures

General advice	: Take off all contaminated clothing immediately.
If inhaled	: Remove to fresh air. If symptoms call a physician. If breathing is irregular or stopped, administer artificial respiration.
In case of skin contact	: Wash off immediately with soap and plenty of water. If skin irritation persists, call a physician.
If swallowed	: Never give anything by mouth to an unconscious person. If swallowed, do not induce vomiting - seek medical advice. Rinse mouth with water.

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

Symptoms	: See Section 11 for more detailed information on health effects and symptoms.
Effects	: See Section 11 for more detailed information on health effects and symptoms.

#### 4.3. Indication of any immediate medical attention and special treatment needed

Treatment	: Treat symptomatically.
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### Section 5: Firefighting measures

#### 5.1. Extinguishing media

Suitable extinguishing media	: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable extinguishing media	: High volume water jet

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

Specific hazards during firefighting	: Flammable. Heating may produce combustible vapour which can form explosive mixture with air. May decompose in a fire giving off toxic fumes, Carbon monoxide, nitrogen oxides (NO <sub>x</sub> )
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#### 5.3. Advice for firefighters

Special protective equipment for firefighters	: In the event of fire, wear self-contained breathing apparatus. Wear appropriate body protection (full protective
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## Flexonal WBC 35

Further information : suit)  
: Cool closed containers exposed to fire with water spray. Heating will cause a pressure rise - with risk of bursting. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

### Section 6: Accidental release measures

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

Personal precautions : Use personal protective equipment. For personal protection see section 8. Provide adequate ventilation. Keep away from heat and sources of ignition. Avoid contact with skin and eyes. Do not breathe vapours or spray mist. Keep away unprotected persons.

#### 6.2. Environmental precautions

Environmental precautions : Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration. If the product contaminates rivers and lakes or drains inform respective authorities.

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

Methods and materials for containment and cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

#### 6.4. Reference to other sections

See Section 1 for emergency contact information.  
See Section 8 for information on personal protective equipment.  
See Section 13 for waste treatment information.

### Section 7: Handling and storage

#### 7.1. Precautions for safe handling

Advice on safe handling : Keep container tightly closed. Handle product only in closed system or provide appropriate exhaust ventilation at machinery. Avoid contact with the skin and the eyes. Do not breathe vapours or spray mist. Emergency eye wash fountains and emergency showers should be available in the immediate vicinity.

Hygiene measures : Keep away from food, drink and animal feedingstuffs. Smoking, eating and drinking should be prohibited in the application area. Wash hands before breaks and at the end of workday. Take off all contaminated clothing immediately. Avoid contact with the skin and the eyes. Do not breathe vapours or spray mist.

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

## Flexonal WBC 35

Requirements for storage areas and containers	: Store in a place accessible by authorized persons only. Keep in an area equipped with solvent resistant flooring. Store in original container.
Advice on protection against fire and explosion	: Combustible Liquids; Vapours may form explosive mixtures with air. Vapours are heavier than air and may spread along floors. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.
Fire-fighting class	: flammable (55°C = Flp < 100°C)
Further information on storage conditions	: Keep tightly closed in a dry and cool place. Keep in a well-ventilated place. Keep away from heat. Product is hygroscopic. Protect against light.
Advice on common storage	: Keep away from food, drink and animal feedingstuffs. Do not store together with oxidizing and self-igniting products.
German storage class	: 6.1D Non-combustible substances of acute toxicity, category 3 / hazardous substances that are toxic or produce chronic effects

### 7.3. Specific end use(s)

Specific use(s)	: Identified use: See table in front of appendix for a complete overview of identified uses.
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## Section 8: Exposure controls/personal protection

### 8.1. Control parameters

Component:	N-methyl-2-pyrrolidone	CAS-No. 872-50-4
<b>Derived No Effect Level (DNEL)/Derived Minimal Effect Level (DMEL)</b>		

DNEL	Workers, Acute - systemic effects, Skin contact	: 208 mg/kg bw/day
DNEL	Workers, Acute - systemic effects, Inhalation	: 80 mg/m <sup>3</sup>
DNEL	Workers, Long-term - systemic effects, Skin contact	: 19,8 mg/kg bw/day
DNEL	Workers, Long-term - systemic effects, Inhalation	: 40 mg/m <sup>3</sup>
DNEL	Population, Acute - systemic effects, Skin contact	: 125 mg/kg bw/day

## Flexonal WBC 35

DNEL		
Population, Acute - systemic effects, Inhalation	:	80 mg/m <sup>3</sup>
DNEL		
Population, Acute - systemic effects, Ingestion	:	26 mg/kg bw/day
DNEL		
Population, Long-term - systemic effects, Skin contact	:	11,9 mg/kg bw/day
DNEL		
Population, Long-term - systemic effects, Inhalation	:	12,5 mg/m <sup>3</sup>
DNEL		
Population, Long-term - systemic effects, Ingestion	:	6,3 mg/kg bw/day
DNEL		
Population, Acute - systemic effects, Ingestion	:	26 mg/kg bw/day

### Predicted No Effect Concentration (PNEC)

Fresh water	:	0,25 mg/l
Marine water	:	0,025 mg/l
Intermittent releases	:	5 mg/l
Fresh water sediment	:	0,805 mg/kg
Soil	:	0,138 mg/kg dry weight (d.w.)
Sewage treatment plant (STP)	:	10 mg/l

### Other Occupational Exposure Limit Values

TRGS 900, Skin designation:, Vapor.  
 Can be absorbed through the skin.

EU ELV, Skin designation:  
 Can be absorbed through the skin.

EU ELV, Short Term Exposure Limit (STEL):  
 20 ppm, 80 mg/m<sup>3</sup>  
 Indicative

EU ELV, Time Weighted Average (TWA):  
 10 ppm, 40 mg/m<sup>3</sup>  
 Indicative

TRGS 900, AGW:, Vapor.  
 20 ppm, 82 mg/m<sup>3</sup>, (2)  
 If the AGW and BGW values are complied with, there should be no risk of reproductive

## Flexonal WBC 35

damage (see Number 2.7).

### 8.2. Exposure controls

#### Appropriate engineering controls

Refer to protective measures listed in sections 7 and 8.

#### Personal protective equipment

##### *Respiratory protection*

Advice : Required, if exposure limit is exceeded (e.g. OEL).  
Required if vapours or aerosol are released.  
Respirator with a gas filter  
Recommended Filter type:A

##### *Hand protection*

Advice : Wear suitable gloves.  
Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).  
Protective gloves should be replaced at first signs of wear.

Material : butyl-rubber  
Break through time :  $\geq 8$  h  
Glove thickness : 0,5 mm

##### *Eye protection*

Advice : Tightly fitting safety goggles

##### *Skin and body protection*

Advice : alkali resistant protective clothing  
Solvent resistant protective clothing

#### Environmental exposure controls

General advice : Do not flush into surface water or sanitary sewer system.  
Avoid subsoil penetration.  
If the product contaminates rivers and lakes or drains inform respective authorities.

## Section 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Form : liquid  
Colour : clear  
Odour : amine-like



## Flexonal WBC 35

Odour Threshold	:	no data available
pH	:	8,5 - 10 (100 g/l; 20 °C)
Melting point/range	:	-24 °C
Boiling point/boiling range	:	204 °C
Flash point	:	91 °C
Evaporation rate	:	no data available
Flammability (solid, gas)	:	not applicable
Upper explosion limit	:	9,5 %(V)
Lower explosion limit	:	1,3 %(V)
Vapour pressure	:	0,3 hPa (20 °C)
Relative vapour density	:	no data available
Density	:	1,028 g/cm <sup>3</sup> (25 °C)
Water solubility	:	completely miscible
Partition coefficient: n-octanol/water	:	log Kow -0,46
Auto-ignition temperature	:	245 °C
Thermal decomposition	:	no data available
Viscosity, dynamic	:	1,796 mPa.s (20 °C)
Explosive properties	:	EU legislation: Formation of explosive air/vapour mixtures is possible.
Oxidizing properties	:	not oxidising

### 9.2. Other information

Molecular weight	:	99,13 g/mol
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## Section 10: Stability and reactivity

### 10.1. Reactivity

Advice	:	Stable under recommended storage conditions.
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### 10.2. Chemical stability

## Flexonal WBC 35

Advice : No decomposition if stored and applied as directed.  
 Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

Hazardous reactions : Hazardous polymerisation does not occur.

### 10.4. Conditions to avoid

Conditions to avoid : Heat, flames and sparks. humid air and water  
 Thermal decomposition : no data available

### 10.5. Incompatible materials

Materials to avoid : Strong oxidizing agents, Strong acids, Strong reducing agents

### 10.6. Hazardous decomposition products

Hazardous decomposition products : Carbon oxides, nitrogen oxides (NOx), Hydrogen cyanide (hydrocyanic acid)

## Section 11: Toxicological information

### 11.1. Information on toxicological effects

Component:	N-methyl-2-pyrrolidone	CAS-No. 872-50-4
<b>Acute toxicity</b>		
<b>Oral</b>		
LD50	: 4150 mg/kg (rat) Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.	
<b>Inhalation</b>		
LC50	: > 5,1 mg/l (rat; 4 h; dust/mist) Irritating to respiratory system.	
<b>Dermal</b>		
LD50	: > 5000 mg/kg (rabbit)	
<b>Irritation</b>		
<b>Skin</b>		
Result	: Mild skin irritation	
<b>Eyes</b>		

## Flexonal WBC 35

Result : Moderate eye irritation

### Sensitisation

Result : not sensitizing

### CMR effects

#### CMR Properties

Carcinogenicity : It is not considered carcinogenic.

Mutagenicity : In vivo tests did not show mutagenic effects  
In vitro tests did not show mutagenic effects

Teratogenicity : Did not show teratogenic effects in animal experiments.

Reproductive toxicity : May damage the unborn child.

### Specific Target Organ Toxicity

#### Single exposure

remark : Target Organs: Respiratory system  
May cause respiratory irritation.

#### Repeated exposure

remark : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

### Other toxic properties

#### Repeated dose toxicity

NOEL : 169 mg/kg  
(rat)  
(Oral)  
Target Organs: Urinary system, TestesSubchronic toxicity

NOEL : 826 mg/kg  
(rabbit)  
(Dermal)  
Target Organs: Urinary system, TestesSubchronic toxicity

NOEL : 0,5 mg/l  
(rat)  
(Inhalation)

## Flexonal WBC 35

Target Organs: Urinary system, Testes

### Aspiration hazard

No aspiration toxicity classification

### Further information

- Other relevant toxicity information : Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.
- Experience with human exposure : Repeated and prolonged exposure to solvents may cause brain and nervous system damage.

## Section 12: Ecological information

### 12.1. Toxicity

<b>Component:</b>	<b>N-methyl-2-pyrrolidone</b>	<b>CAS-No.</b>
		<b>872-50-4</b>

### Acute toxicity

#### Toxicity to daphnia and other aquatic invertebrates

EC50 : > 1000 mg/l (Daphnia magna (Water flea); 24 h)

#### algae

EC50 : 600,5 mg/l (Desmodesmus subspicatus (green algae); 72 h)

#### Bacteria

EC50 : 100 mg/l (activated sludge; 48 h)

### Chronic toxicity

#### Aquatic invertebrates

NOEC : 12,5 mg/l (Daphnia magna (Water flea); 21 d)

### 12.2. Persistence and degradability

<b>Component:</b>	<b>N-methyl-2-pyrrolidone</b>	<b>CAS-No.</b>
		<b>872-50-4</b>

### Persistence and degradability

## Flexonal WBC 35

### Persistence

Result : no data available

### Biodegradability

Result : 73 % (Related to: Biochemical oxygen demand; Exposure Time: 28 d)(OECD 301 C)  
 Readily biodegradable.

### 12.3. Bioaccumulative potential

<b>Component:</b>	<b>N-methyl-2-pyrrolidone</b>	<b>CAS-No.</b>
		<b>872-50-4</b>

### Bioaccumulation

Result : log Kow -0,46 (25 °C)  
 Bioaccumulation is not expected.

### 12.4. Mobility in soil

<b>Component:</b>	<b>N-methyl-2-pyrrolidone</b>	<b>CAS-No.</b>
		<b>872-50-4</b>

### Mobility

Soil : The product is water soluble., Not expected to adsorb on soil., The product evaporates slowly.

### 12.5. Results of PBT and vPvB assessment

#### Results of PBT and vPvB assessment

Result : This substance is not considered to be persistent, bioaccumulating nor toxic (PBT)., This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

<b>Component:</b>	<b>N-methyl-2-pyrrolidone</b>	<b>CAS-No.</b>
		<b>872-50-4</b>

#### Results of PBT and vPvB assessment

Result : This substance is not considered to be persistent, bioaccumulating nor toxic (PBT)., This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

## **Flexonal WBC 35**

### **12.6. Other adverse effects**

#### **Additional ecological information**

Result : Do not flush into surface water or sanitary sewer system.  
Avoid subsoil penetration.

## **Section 13: Disposal considerations**

### **13.1. Waste treatment methods**

Product : Disposal together with normal waste is not allowed. Special disposal required according to local regulations. Do not let product enter drains. Contact waste disposal services.

Contaminated packaging : Empty contaminated packagings thoroughly. They can be recycled after thorough and proper cleaning. Packagings that cannot be cleaned are to be disposed of in the same manner as the product.

European Waste Catalogue Number : No waste code according to the European Waste Catalogue can be assigned for this product, as the intended use dictates the assignment. The waste code is established in consultation with the regional waste disposer.

## **Section 14: Transport information**

Not dangerous goods for ADR, RID and IMDG.

### **14.1. UN number**

Not applicable.

### **14.2. UN proper shipping name**

Not applicable.

### **14.3. Transport hazard class(es)**

Not applicable.

### **14.4. Packaging group**

Not applicable.

### **14.5. Environmental hazards**

Not applicable.

## Flexonal WBC 35

### 14.6. Special precautions for user

Note : not applicable

### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

IMDG : Not applicable.

## Section 15: Regulatory information

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

WGK (DE) : N-methyl-2-pyrrolidone: WGK Identification Number: 1.181; WGK:1; slightly water endangering; Classification source is Annex 2.

Other regulations : Occupational restrictions: Take note of Dir 92/85/EEC on the safety and health of pregnant workers at work and of Dir 94/33/EC on the protection of young people at work.

#### N-methyl-2-pyrrolidone

EU. REACH Candidate List of Substances of Very High Concern for Authorization (SVHC)  
 Decision Number: ED/31/2011 EC Number/Date of inclusion: 20/06/2011; 2.128.281  
 Reproductive toxicity

EU. REACH, Annex XVII, Marketing and Use Restrictions (Regulation 1907/2006/EC)  
 Listed Point Nos.: 30

EU RA R2 : N-methyl-2-pyrrolidone: 212-828-1; Reproductive toxicity Category 1B

#### Notification status

##### N-methyl-2-pyrrolidone:

Regulatory List	Notification	Notification number
AICS	YES	
DSL	YES	
INV (CN)	YES	
ENCS (JP)	YES	(5)-113
JEX (JP)	YES	(5)-113
ISHL (JP)	YES	(5)-113
ISHL (JP)	YES	8-(1)-1014
ISHL (JP)	YES	8-(1)-2246
ISHL (JP)	YES	8-(1)-1013
TSCA	YES	
EINECS	YES	212-828-1
KECI (KR)	YES	KE-25324
PICCS (PH)	YES	

## Flexonal WBC 35

### 15.2. Chemical Safety Assessment

A Chemical Safety Assessment has been carried out for this substance.

### Section 16: Other information

#### Full text of R-phrases referred to under sections 2 and 3.

R36/37/38	Irritating to eyes, respiratory system and skin.
R61	May cause harm to the unborn child.

#### Full text of H-Statements referred to under sections 2 and 3.

H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H360D	May damage the unborn child.

#### Further information

Other information : The information provided in this Safety Data Sheet is correct to our knowledge at the date of its revision. The information given only describes the products with regard to safety arrangements and is not to be considered as a warranty or quality specification and does not constitute a legal relationship. The information contained in this Safety Data Sheet relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text

|| Indicates updated section.