

Safety data sheet in accordance with Regulation (EG) No. 1907/2006, Appendix II

1. DESIGNATION OF THE MATERIAL OR THE MIXTURE AND THE COMPANY

- 1.1 Product identifier**
Esbit dry fuel
- 1.2 Relevant identified uses of the material or mixture that are not encouraged**
See product identifier
- 1.3 Designation of the company**
Manufacturer/ Supplier
Gummi-Noller GmbH
Street/ P.O. Box
Ysostraße 2
National designation/ Postal code/ City
DE - 27283 Verden
Phone / Fax
+49 (0) 42 31 / 8 88-0, +49 (0) 42 31 / 8 88-88
Contact partner for safety data sheet
alexandra.guenther@gmx.de
- 1.4 Emergency number**
Advising center for symptoms of poisoning:
Poison Control Center North:
Phone.: (+49) 05 51-19 24 0
Company emergency number:
Phone: (+49) 0 42 31 / 8 88-0

2. POSSIBLE DANGERS

- 2.1 Classification of the material or mixture**
Regulation (EG) No. 1272/ 2008
Combustible material – Can cause allergic skin reactions
H228; H317
Guideline 67/ 548/ EWG or 1999/ 45/ EG
Lightly combustible – Sensitivity through skin contact possible
R11; R43

- 2.2 Designation elements**
Regulation (EG) No. 1272/ 2008
Code letter and danger designation(s) of the product



Signal word: Caution

Hazardous components on labeling

Methenamine

Danger notices

H228 Combustible material.
H317 Can cause allergic skin reactions.

Safety notices

P261 Avoid breathing in dust.
P280 Wear protective gloves.
P302 + P352 UPON CONTACT WITH THE SKIN: Wash with a great deal of water and soap.
P333 +P 313 Upon skin irritation or rash: Seek medical help/consult medical aid.
P501 Keep contents/container of a disposal as hazardous waste.

2.3 Other dangers

The mixture does not fulfill the criteria for classification as PBT or vPvB

3. COMPOSITION/ INFORMATION ON COMPONENTS

3.1 Material

This product is a mixture

3.2 Mixture

CAS No.	EG No.	Reach Reg. No.	Name	Classification in accordance with Regulation (EG) No. 1272/ 2008 (CLP)
100-97-0	202-905-8	01-2119474895--20-0000	Methenamine	GHS 02, GHS 07
100-97-0	202-905-8	01-2119474895--20-0004	Methenamine	GHS 02, GHS 07
8002-74-2	232-315-6	01-2119488076-30-0005	Wachs	omitted

4. FIRST AID MEASURES

4.1 Description of first aid measures

General notices:

Get people out of the danger area.
 Immediately remove contaminated, moistened pieces of clothing.
 In case of health problems, consult a doctor.

After breathing in:

Bring person into the open air and consult a doctor according to symptoms.
 Bring along data sheet.

After eye contact:

As a basis, rinse with water for several minutes; if necessary, consult a doctor.
 Bring along data sheet.

After skin contact:

As a basis, rinse with a lot of water; in case of skin irritation (redness, etc.), consult a doctor.
 Bring along data sheet.

After swallowing:

Rinse out mouth, spit out liquid again.
 Immediately – when made known – drink a sufficient amount of liquid (water).
 Administer medicinal carbon (3 tablespoons of medicinal carbon mixed into 1 glass of water).
 In no case administer edible oils, castor oil, milk, or alcohol.
 Immediately call a doctor, keep data sheet ready.

Notes for the doctor:

Delayed effect from exposure must be taken into consideration.

4.2 Most important acute symptoms and effects with delayed effect

acute: high-sensitive potential
 chronic: skin damage; stomach intestinal disorders and damage to the urinary organs after massive oral intake

4.3 Notices on immediate medical help or special treatment

In case of unconsciousness, alarm emergency doctor

5. MEASURES ON FIRE FIGHTING

5.1 Extinguishing agents

Suitable extinguishing agents

Alcohol-resistant foam, CO₂, water spray

**Extinguishing agent unsuitable for reasons of safety:
High-volume water jet**

5.2 Particular dangers arising from material/mixture

In case of fire, the following can form:

Formaldehyde

Ammonia

Carbon oxide

Nitrous gases

Hydrocyanic acid (hydrogen cyanide)

5.3 Notices for fire fighting

Environmentally appropriate breathing protective device. According to the size of the fire, use chemically protective clothing. Dispose of contaminated extinguishing agent in accordance with legal regulations.

6. MEASURES IN CASE OF UNINTENTIONAL RELEASE

6.1 Personal cautionary measures, protective equipment, and procedure to be used in cases of emergency

Non-authorized persons must stay away

Ensure sufficient ventilation.

Avoid contact with eyes and skin as well as inhalation.

6.2 Environmental protection measures

Do not allow to get into sewer system.

In case of accident-related release into the sewer system, inform responsible authorities.

6.3 Methods and material for retention and cleaning

Remove mechanically and dispose of in accordance with Point 13.

6.4 Reference to other sections

See also Point 13; for personal safety equipment see Point 8

7. HANDLING AND STORAGE

7.1 Protective measures for safe handling

Notices for secure environment:

See Point 6.1

Ensure good room ventilation.

Avoid contact with eyes and skin.

Remove sources of ignition – Do not smoke.

Eating, drinking, smoking, as well as storage of food in the work space forbidden.

Observe notices on the label as well as the instructions for use.

7.2 Conditions on secure storage with consideration of incompatibilities

Requirements for storage spaces and containers:

Store product only in original packaging and in closed condition.

Do not store product in passages and stairwells.

Uphold separation regulations.

Further information on storage conditions:

Store protected against moisture and keep closed.

Storage class 4.1 B in accordance with TRGS 510

7.3 Specific end uses

Dry fuel

8. LIMITATION AND OVERSIGHT OF EXPOSURE/PERSONAL PROTECTIVE EQUIPMENT

8.1 Parameters to be observed

none

8.2 Limitation and oversight of the exposure

8.2.1 Limitation and oversight of exposure in the work place

Ensure good ventilation. This can be achieved through local suction or general exhaust air.

The general hygiene measures for proceeding with chemicals must be used.

Wash hands before breaks and at the end of work.

Keep food, drinks, and foodstuffs away.

Breathing protection:

Not necessary in normal cases.

In case of dust formation:

Not necessary in normal cases.

Hand protection:

Rubber gloves (EN 374).

Eye protection:

Not necessary in normal cases.

Body protection:

Not necessary in normal cases.

Additional information on hand protection

The selection was made between mixtures according to the best knowledge and via the information on the ingredients.

The exact breakthrough time of the glove material must be taken from the protective glove manufacturer and upheld.

8.2.2 Limitation and oversight of environmental exposure

No data available

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on the basic physical and chemical properties

Unit status:	Fixed
Color:	White
Odor:	Ammonia
pH value 10%:	No data available
Boiling temperature/boiling area (in °C):	No data available
Melting point/melting area (in °C):	280 (subl.)
Flash point (in °C):	No data available
Flammability (solid, gaseous):	Lightly flammable
Ignition temperature:	390°C
Self-inflammability:	Approx. 410 degrees C at 1013.25 hPa
Lower explosion limit:	No data available
Upper explosion limit:	No data available
Density (g/ml):	1.33
Bulk density:	No data available
Water solubility:	100 - 874 g/l/20°C, 844 g/l/60°C
Vapor density (Air = 1):	4.84, Literature information
Miscibility:	Alcohol, Chloroform

9.2 Other information

Further physical-chemical data were not determined.

10. STABILITY AND REACTIVITY

10.1 Reactivity

Contact with strong acids, oxidation materials, peroxides, hydrogen halides will lead to a strong reaction with heat development.

10.2 Chemical stability

The product is chemically stable under normal environmental conditions (room temperature).

10.3 Possibility of dangerous reactions

With proper use, no dangerous reactions are expected.

10.4 Conditions to be avoided

Humidity
 Strong heating

10.5 Incompatible materials

Aluminum
 Tin
 Zinc

10.6 Dangerous decomposition products

See Point 5.2
 Formaldehyde, Nitrous gases, Ammonia, Carbon oxide, Hydrocyanic acid (Hydrogen cyanide)

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity as well as immediately arising effects

<i>Swallowing, LD₅₀ rat oral (mg/kg):</i>	<i>9200, (information on main ingredient)</i>
<i>Breathing in, LC₅₀ rat inhalative (mg/l/4h):</i>	<i>No data available</i>
<i>Skin contact, LD₅₀ rat dermal (mg/kg):</i>	<i>No mortality > 2000 mg/kg</i>

Delayed arising as well as chronic effects

Sensitivity effect:	Yes (Breathing in and skin contact)
Cancer-causing effect:	Oral studies of rats and mice show no cancer-causing effect up to a dose of 2500 mg/kg
Mutagenic effect:	No data available
Teratogenic effect:	No data available
Narcotic effect:	No data available

Other notices

Classification in accordance with calculation procedure.

Possibly arising: With sensitization, concentrations under the limit value can result in signs of asthma.
 Irritation of the eyes

Breathing in: Irritation of the nasal and throat mucous membranes; coughing; lack of breath

Swallowing: Nausea; vomiting; gastrointestinal complaints; kidney damage

12. ENVIRONMENTAL INFORMATION

12.1 Toxicity

Toxicity to fish: LC50/96h 49 800mg/l *Lepomis macrochirus*
 Toxicity for water organisms: LC 50/48h 36g/l *Daphnia Magna* LC 50/96h 92,5g/l *Nitroca spinnipes*
 EC50/14d 92,5g/l *Pseudokirchnerella subcapitata*

Ecological toxicity: No data available

12.2 Persistence and degradability

Abiotically degradable. Hydrolysis in contact with water. Not easily biologically degradable.

12.3 Bioaccumulation potential

Bioaccumulation potential is not expected

12.4 Mobility on floor

No data available

12.5 Results of the PBT and vPvB evaluation

In accordance with the present information, the criteria for classification as PBT or vPvB are not fulfilled.

12.6 Other damaging effects

Water hazard class (Germany): 1 (Self-classification)

13. NOTICES ON DISPOSAL

13.1 Procedure for waste handling

For the product

Waste code No. EG:

The waste codes names are recommendations based on the probable use of this product. Because of the special use and disposal properties by the user, under certain circumstances, other waste codes can also be assigned by the user. (2001/118/EG, 2001/119/EG, 2001/573/EG)

07 07 99 Waste otherwise not specified

07 01 99 Waste otherwise not specified

Recommendation:

Observe local legal specifications

For example, deposit in a suitable dump site.

For example, suitable combustion system.

For contaminated packaging material

Observe local legal specifications

Non-contaminated packaging can be reused.

Packaging that cannot be cleaned must be disposed of like the material.

15 01 01 Packaging made of paper and cardboard

15 01 02 Packaging made of plastic

14. INFORMATION ON TRANSPORT

14.1 General information

UN number: 1328

14.2 Street / Rail transport (GGVSEB/ADR/RID)

Class / packaging group (VG): 4.1 / III



Designation of the material: HEXAMETHYLENTETRAMINE

Classification code: F1

LQ 9: 5 Kg

Tunnel limitation code: (E)

14.3 Transport by ship

GGVSee/IMDG code: 4.1 / III (Class/VG)
 EmS: F-A, S-G
 Marine pollutant: n.a.
 Designation of the material: HEXAMETHYLENETETRAMINE



14.4 Transport by plane

IATA: (Class/Subsidiary risk/packaging group) 4.1 / - / III
 Designation of the material: Hexamethylenetetramine

14.5 Additional notices

Danger number as well as packaging code upon request.

15. LEGAL SPECIFICATIONS

15.1 Specifications on safety, health and environmental protection/ specific legal specifications for the material or the mixture

Regulation (EG) No. 1907/2006 (REACH regulation)

Regulation (EG) No. 1272/2008 (CLP)

Technical regulations for workplaces: ASR A1.3 Safety and health protection designation

Administrative provision for materials hazardous to water (VwVwS)

TRGS 200 Classification and marking of materials, preparations and products; Edition February 2007, corrected February 2010, with changes and supplements August 2010

TRGS 201 Classification and marking of waste for removal in the environment; Edition July 2002

TRGS 400 Danger evaluation for activities with hazardous materials; Edition January 2008

TRGS 510 Storage of hazardous substances in portable containers; Edition 2013 supplemented 2015

TRGS 555 Operating instructions and information on employees; Edition February 2008; changed and supplemented July 2009

TRGS 600 Substitution; Edition August 2008

TRGS 401 Danger through contact with skin, transfer – Evaluation – Measures; Edition June 2008; corrected February 2010

TRGS 500 Protective measures; Edition January 2008, supplemented May 2008

TRGS 510 Storage of hazardous materials in portable containers; Edition October 2010

TRGS 800 Fire protection measures; Edition December 2010

Youth Health and Safety Act (German specification).

Maternity Protection Act (German specification).

Limitations Directive 76/769/EWG, 1999/51/EG, 1999/77/EG

15.2 Chemical safety assessment

16. OTHER INFORMATION

This information relates to the product in delivered status.

Storage class in accordance with TRGS 510: 4.1 B

Hommel: 870

Legend:

n.a. = not usable / n.v. = not available / n.g. = not reviewed / k.D.v. = no data available

AGW = Workplace limit value / BGW = Biological limit value

VbF = Regulation of combustible materials (Austrian specification)

WGK = Water pollution class in accordance with the Administrative Regulation on Substances Hazardous to Waters - VwVwS (German specification)

WGK3 = strongly hazardous to water, WGK2 = hazardous to water, WGK1 = slightly hazardous to water

VOC = Volatile organic compounds

AOX = adsorbable organic halogen compounds

The information given here should describe the product with regard to the necessary safety specifications.

It does not serve to ensure certain properties and is based on the current state of our knowledge.

Liability excluded.

Created by:

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Changes from the last version:

Adjustments to Reach and CLP VO of the EU

Adjustments to source of storage class

Appendix 1

Exposure scenarios

Content

1 Overview of exposure scenarios and the scope of the life cycle of the material

2 Summary of the measurements

3 Exposure scenarios

3.1 Manufacturing processes

3.2 Industrial use

3.3 Use by professional user

3.4 Use by end user

ES Nr.	Amount	Identified use	Life cycle	Sector used	Prod. K	Process K.	ERC
ES 1 Formula	-	-	-	-	n.a.	-	
ES 2 industrial use	-	-	-	-	n.a.	-	
ES3 Professional use	-	-	-	-	n.a.	-	
ES4 Use by consumer	200	X	X	SU 21	PC 3	n.a.	ERC 8a ERC 8c ERC 9a

1 Overview

The present exposure scenario is based on the exposure scenarios of the manufacturer of the material available in the mixture, or no exposure scenarios are necessary for these materials.

2 Summary of the risk management measures

Uses	
Use 0 Manufacture	No use in manufacturing processes known
Use 1 Formulation	No use in formulation processes known
Use 2 Industrial Use	No use in industrial processes known
Use 3 Professional Use	No professional use known
Use 4 Consumer Use	Use by end consumer

Exposure scenario by the end consumer

Brief title	Use by end consumer
Description of use	SU 21 Use by end consumer
Processes described	PC 13 Flammable materials
Evaluation methods	EU RART (Part safety of persons and EUSES part environment)

2 Conditions of use and risk management measures

PC 13 Combustibles

2.1 Oversight of the load of the consumer

Product characteristics

Concentration: max. 97%

Unit status: fixed (tablets)

low dust formation

Amounts used

approx. 200 t/a as combustible tablets

Frequency and length of the exposure:

a few seconds for contact (unpacking and breaking of tablets)

Frequency: over 100 days / year

The human factor is not influenced by risk management

Local skin stress from unpacking and breaking of tablets

Amounts/one use: max. 200 g

Safety and usage instructions in the packaging

2.2 Monitoring of environmental load

Product characteristics

Concentration: max. 97%

Unit status: fixed (tablets)

low dust formation

Amounts used:

largest local amount: 0.002 t

yearly amount recorded by the exposure scenario: 20 t/year

Emissions days / year: 365

Environmental factors that cannot be influenced by risk management

Thinning factor 10

Quantitative risk characterization for consumer

	Path	Exposure concentration	Toxic principal endpoint with critical effect	DNEL	Relationship of the risk characterization
Systemic effects on one day	dermal	See long-term exposure	-	22.9 mg/kg bw	-
"	Inhalation	-	-	140 mg/cbm	-
"	Oral	See long-term exposure	-	200 mg/kg bw	-
"	Combined paths	-	-	-	-
Local effects on one day	-	-	-	-	-
"	Inhalation	-	-	-	-
Systemic long-term effects	dermal	0.445 mg/kg bw	repeated toxic dose	1.9 mg/kg bw/d	0.2342
"	Inhalation	0 mg/cbm/d	repeated toxic dose	6.4 mg/cbm/d	0
"	oral	0 mg/kg bw/d	repeated toxic dose	0.95mg/kg bw/d	0
"	Combined paths	0.445 mg/kg bw	repeated toxic dose	1.9 mg/kg bw/d (dermal)	0.2342
Local long-term effects	dermal	-	-	-	-
"	Inhalation	-	-	-	-

Environment

Compartment	PEC	PNEC	PEC/PNEC	Discussion
Fresh water	7.32 E-03mg/l	3 mg/l	2.44 E-03	The material is not a direct threat to the environment
Sea water	7.01 E-03mg/l	0.5 mg/l	1.40 E-03	The material is not a direct threat to the environment
Fresh water sediment	-	2.4 mg/kg	-	The material is not a direct threat to the environment
Sea water sediment	-	0.4 mg/kg	-	The material is not a direct threat to the environment
Water in fresh water in the food chain	-	55.33 mg/kg food	-	The material is not a direct threat to the environment
Water in sea water in the food chain	-	55.33 mg/kg food	-	The material is not a direct threat to the environment

Microbiological activity in the wastewater system

Compartment	PEC	PNEC	PEC/PNEC	Discussion
STP	0.0541	10 mg/l	5.41E-04	The material is not a direct threat to the environment

Appendix 2:
omitted