

Material Safety Esbit according to Regulation (EC) no. 1907/2006, Annex II

1. Identification of substance, MIXTURE AND OF THE COMPANY

1.1 Product:

Dry fuel: Esbit

1.2. Relevant identified uses of the substance or mixture

Solid Fuel

Uses advised against: No

1.3. Company name Manufacturer / Supplier

Rubber Noller GmbH
DE-2783 Verden
+49 (0) 4231/8 88-0, 49 (0) 4231/8 88-88

Contact Material Safety Data Sheet: alexandra.guenther@gmx.de

1.4. Emergency number, help desk in case of poisoning

Poison control center-North: Tel .: (+49) 05 51-19 24 0
Telephone number of the company: Tel .: (+49) 0 42 31/8 88-0

2. Hazards

2.1. Classification of the substance or mixture according to Regulation (EU) 1272/2008

H 228 Flammable solid

H317 may cause an allergic skin reaction

2.2. The product identification element according to Regulation (EC) No. 1272/2008 letters and hazard designation / s

Signal word: Warning



GHS 02 GHS 07

Hazardous component / s of labeling:

Methenamine

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Hazard statements:

H 228 Flammable solid

H317 May cause an allergic skin reaction

Safety Instructions:

P210 Keep away from heat / sparks / open flames / hot surfaces. do not smoke

P261 Avoid breathing dust

P280 Wear protective gloves

P302 + P352 In case of contact with skin: Wash with plenty of water

P333 + P313 If skin irritation or rash: Get medical advice / attention Help

3. Composition and information on ingredients

Esbit is a mixture of from Hexamethylenetetramine by 2 manufacturers and wax

Ingredients:

EG No.:	CAS No.:	Name	Reach Registration Number	GHS Classification
202-905-8	100-97-0	Hexamethylentetramin	01-2119474895-20-0000	GHS 02, GHS 07
202-905-8	100-97-0	Hexamethylenetetramin	01-2119474895-20-0004	GHS 02, GHS 07
232-315-6	8002-74-2	Wax	01-2119488076-30-0005	delated

4. First Aid Measures**4.1 Description of first aid measures****General Information:**

Remove persons from danger area.

Remove contaminated clothing immediately

If accidentally occurrence of ill health doctor.

Inhalation:

Supply person with fresh air and consult doctor according to symptoms.

Keep Data Sheet available.

After eye contact:

With plenty of water for several minutes. Rinse thoroughly, if necessary, seek medical attention.

Keep Data Sheet available.

Skin contact:

Wash with plenty of water, If skin irritation occurs (redness etc.), consult doctor.

Keep Data Sheet

After swallowing (unlikely route of exposure)

Rinse mouth, spit out liquid.

Immediately - drink plenty of fluids (water) - while retaining consciousness.

Activated charcoal to give (3 tablespoons of activated charcoal in 1 glass of water suspended).

Under no circumstances enter edible oils, castor oil, milk or alcohol.

Call doctor immediately, have Data Sheet available.

Notes to physician:

Delayed effects from exposure can be expected.

4.2 Most important acute and delayed symptoms and effects,

acute: skin-sensitizing potential

Chronic: skin damage; Gastrointestinal disturbances and damage to the urine contend organs after massive oral exposure

4.3 Indication of immediate medical attention and special treatment

If unconscious, emergency alert

5. Fire Fighting Measures**5.1 Extinguishing media****Suitable extinguishing media**

Alcohol-resistant foam, CO₂, water

Because safety Problems not Extinguishing agents

High pressure waterjet

5.2 of substance / mixture of hazards

In case of fire the following can develop:

formaldehyde

ammonia

Carbon oxides

Nitrogen oxides

Hydrocyanic acid (hydrogen cyanide)

5.3 Advice for firefighters

Use self-contained breathing apparatus, use depending on size of fire protective suit

Dispose of contaminated extinction water according to official regulations.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

not keep unauthorized persons
Ensure adequate ventilation.
Avoid eye and skin contact

6.2 Environmental precautions

Do not empty into drains.
If accidental entry into drains inform respective authorities.

6.3 Methods and materials for containment and cleaning up

Record and gem mechanically. Dispose of point 13.

6.4 Reference to other sections

See point 13, personal protective equipment see section 8

7. HANDLING AND STORAGE**7.1 Precautions for safe handling**

Tips for safe handling.:
See point 6.1
Ensure good ventilation.
Avoid eye and skin contact.
Keep ignition sources away - Do not smoke.
Eating, drinking, smoking, as well as food-storage, is prohibited in work space.
Observe label and instructions for use.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and containers:
Store products only in original packing.
Not to be stored in gangways or stair wells.
Comply with segregation requirements.

Further information about storage conditions:
Protect against moisture and store closed.
Storage class 4.1 B

7.3 Specific end use

Solid Fuel

8. LIMITATION OF EXPOSURE/PERSONAL PROTECTION**8.1 Control parameters**

no

8.2 Limitation and monitoring of exposure

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8.2.1 Limitation and monitoring of exposure in the workplace

Provide adequate ventilation. This can be achieved by local suction or general air extraction.

Applies only if maximum permissible exposure values are listed.

General hygiene measures for the handling of chemicals are applicable.

Wash hands before breaks and at end of work.

Keep away from foodstuffs, beverages and feed.

Respiratory protection:

Normally not required.

In case of dust formation:

not to be expected due to the shape of the product when used properly

Hand protection:

Rubber gloves (EN 374).

Eye protection:

Normally not required.

Body protection:

Normally not required.

Additional information on hand protection

Selection made for mixtures according to the best available knowledge and information on the ingredients.

8.2.2 Environmental exposure

no Data

9. PHYSICAL AND CHEMICAL PROPERTIES**9.1 Information on basic physical and chemical properties**

Physical State:	Solid
Color:	White
Odour:	Ammonia
pH 10%:	no Data
Boiling point / boiling range (° C):	decomposition.
Melting point / melting range (° C):	280 (subl.)
Flash point (° C):	no Data
Flammability (solid, gaseous):	Highly flammable
Ignition temperature:	390 ° C
Self:	Ca. 410 ° C bei 1013,25hPa
Lower explosion limit:	no Data
Upper explosion limit:	no Data
Density (g / ml):	1.33
Bulk density:	no Data
Water solubility:	100-874 g / l / 20 ° C, 844 g / l / 60 ° C
Vapor Density (Air = 1):	4.84, literature

Miscibility: alcohol, chloroform

9.2 Other information

Other physical and chemical data have not been determined.

10. STABILITY UND REAKTIVITY

10.1 Reactivity

Contact with strong acids, oxidizing agents, peroxides, hydrogen halides leads to strong exothermic reaction.

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature).

10.3 Possibility of hazardous reactions

When used Dangerous reactions are not expected

10.4 Conditions to avoid

humidity
strong heating

10.5 Incompatible materials

aluminum
tin
zinc

10.6 Hazardous decomposition products

See point 5.2

11. TOXIKOLOGICAL INFORMATIONS

11.1 Information on toxicological effects

Acute toxicity and immediate effects

Ingestion:	LD50 rat oral (mg / kg):	> 20000mg / kg bw. (main ingredient indication)
Inhalation:	LC50 rat inhalation (mg / l / 4h):	no Data
Skin contact:	LD50 rat dermal (mg / kg):	No mortality > 2000mg / kg bw.

Delayed and chronic effects

Sensitization:	Yes (inhalation and skin contact)
Carcinogenicity:	Oral studies in rats and mice showed no carcinogenic effects up to a dose of 2500 mg / kg bw
Mutagenicity:	no Data
Reproductive toxicity:	no Data
Narcosis:	no Data

Other information

Classification according to calculation procedure.

The following may occur: In case of sensitivity, concentrations may result already below the limit asthmatic symptoms.

Irritation of the eyes

Inhalation: Irritation of the nose and throat; Cough; Difficulty in breathing

Ingestion: Nausea; Vomiting; Gastrointestinal complaints; Kidney damage

12. ECOLOGICAL INFORMATION**12.1 Toxicity**

Fischtotoxicity: LC50/96h 41g/l *Lepomis macrochirus*

Toxic for aquatic organisms: LC50 /48h 36g/l *Daphnia Magna*

LC 50/96h 92,5 g/l *Nitroca spinipes*

EC 50 14d 92,5g/l *Pseudokirchnerella subcapitala*

Ökotoxizität: no Data

12.2 Persistence and Degradability

Abiotic degradation. On contact with water hydrolysis. not ready biodegradable.

12.3 Bioakkumulative

A Bioaccumulationspotential is not excepted

12.4 Mobility in Soil Boden

no Data

12.5 Ergebnisse der PBT- und vPvB-Beurteilung

Gemäß den vorliegenden Angaben sind die Kriterien für die Einstufung als PBT bzw. vPvB nicht erfüllt.

13. Waste**13.1 Waste treatment methods**

For the product

Waste code no. EC:

The waste codes are recommendations based on the scheduled use of this product.

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Because of special use and disposal circumstances at the user other waste codes may be allocated under certain circumstances. (2001/118 / EC, 2001/119 / EC, 2001/573 / EC)

07 07 99 wastes a.n.g.

07 01 99 wastes a.n.g.

recommendation:

Pay attention to local and national official regulations

For example deposited in approved landfills.

Eg suitable incineration plant.

For contaminated packing material

Pay attention to local and national official regulations

Untampered packaging can be reused.

Uncleaned packaging must be disposed of like the product.

15 01 01 paper and cardboard

15 01 02 plastic packaging

14. TRANSPORT INFORMATION

14.1 General Information

UN number: 1328

14.2 Road / Rail transport (GGVSE / ADR / RID)

Class / packing group (VG): 4.1 / III



Name: HEXAMETHYLENETETRAMINE

Classification code: F1

LQ 9: 5 Kg

Tunnel restriction code: (E)

14.3 Transport by sea



GGVSee / IMDG Code: 4.1 / III (class / VG)

EmS: F-A, S-G

Marine pollutant (Marine Pollutant): N.A.

Name: HEXAMETHYLENETETRAMINE

14.4 Transport by air

IATA: (class / secondary danger / packing group) 4.1 / - / III

Name: Hexamethylenetetramine

14.5 Additional information

Danger code and packing code on request.

15. REGULATORY INFORMATION

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

Technical regulations for workplaces: ASR A1.3 safety and health signs (German regulation)

RL 92/85 / EEC to EU maternity leave Maternity Protection Act.

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15.2 Stoffsicherheitsbeurteilung: see Annex I

16. Other INFORMATION

These details refer to the product as it is delivered.

Storage class: 4.1 B

Hommel 870

Legend:

n / A. = Not applicable / N.A. = Not available / N.G. = Not checked / k.D.v. = No data available

VOC = Volatile organic compounds (VOCs)

The information contained here should describe the product with regard to the necessary safety precautions, they are not meant to guarantee definite characteristics and based on the present state of knowledge.

Liability excluded.

Issued by:

GAB dangerous training and consulting, Herold Straße 20, D-09423 Gelenau,

Tel .:

Fax:

Exposure Scenarios

Contend

- 1 Overview of exposure scenarios and the scope of the life cycle of the substance
- 2 Summary of measurements
- 3 exposure scenarios
 - 3.1 Production processes
 - 3.2 Industrial use
 - 3.3. Use by professional users
 - 3.4. Use by end user

ES No	Quantity	identified uses	Lifecycle	use Sector	Prod C	Process C	ERC
ES 1 Formul.	-	-	-	-	nA	-	-
ES 2 indus. use	-	-	-	-	nA	-	-
ES3 Prof. use	-	-	-	-	nA	-	-
ES 4 Consumer use	200t	X	X	SU 21	PC 13	NA	ERC 8a ERC 8c ERC 9a

1 Overview

This exposure scenario is based on the exposure scenarios, the manufacturer of the substances contained in the mixture or it is for these substances have no exposure scenarios required.

2 Summary of risk management measurements

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

Exposure Scenario: use by end users

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Short	use by end users
Use Description	SU 21 use by end users
Described processes	PC 13 Fuels
Valuation method	EU RART (part human health and the environment part of EUSES)

2 Conditions of use and risk management measurements

PC 13 fuels

2.1 Control of consumer exposure

product characteristics

Concentration: max. 97%

Physical state: solid (tablets)

low dusting

Amounts used: about 200t / a as fuel pellets

Frequency and duration of exposure:

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

Frequency: more than 100 days / year

The human factor is not affected by the risk management

Local skin consumer exposure to unpack and tablet breaker

Amounts per one use: max 200g

Safety and application instructions on the packaging

2.2 burden Controll on the environment

product characteristics Concentration: max. 97%

Physical state: solid (tablets)

low dusting

Amounts used: largest local amount 0.002

annual amount which is detected by this exposure scenario: 20t / year

Days of emission / year 365

Environmental factors that can not be influenced by the risk management

Dilution factor 10

Quantitative risk characterization for consumers

	Way	Expositions Concentrations	Toxic main endpoint	DNEL	ratio of Risticcharacterisation
Systemic affekts on one day	Dermal	See longtimexpositiom	-	22,9mg/kg bw	-
"	inhalation	-	-	140 mg/	-

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				cbm	
"	oral	See longtimexpositiom	-	20mg/kg bw	-
"	Combined Way	See longtimexpositiom	-	-	-
Local effects on one day	-	-	-	-	-
"	inhalation	-	-	-	-
Sytemic long-term effects	Dermal	-	repeated toxic dose	1,9mg/kg bw / d	0,2342
"	inhalation	0,445 mg/kg bw	repeated toxic dose	6,4 mg/cbm/d	0
"	oral	0 mg/cbm/d	repeated toxic dose	0,95 mg/kg bw/d	0
"	Combined Way	0 mg/kg bw/d	repeated toxic dose	1,9mg/kg bw/d (dermal)	0,2342
Local long-term effects	Dermal	0,445	-	-	-
"	inhalation	0,445 mg/kg bw	-	-	-

Enviroment

Compartments	PEC	PNEC	PEC/PENC	Diskussion
Freshwater	7,32E-03 mg/l	3mg/l	2,44E-03	The substance is no immediate Concern for the environment
Meereswasser	7,01E-04mg/l	0,5mg/l	1,40E-03	The substance is no immediate Concern for the environment
Süßwassersediment	-	2,4mg/kg	-	The substance is no immediate Concern for the environment
Meeressediment	-	0,4mg/kg	-	The substance is no immediate Concern for the environment
Wasser in Süßwasser der Lebensmittelkette	-	53,33mg/kg food	-	The substance is no immediate Concern for the environment
Wasser in Meereswasser der Lebensmittelkette	-	53,33mg/kg food	-	The substance is no immediate Concern for the environment

Micobiological activity in sewage treatment systems

Compartments	PEC	PNEC	PEC/PENC	Discussion
STP	0,0541	100mg/l	5,41E-04	Der Stoff ist keine unmittelbare Gefährdung für die Umwelt

ANNEX 2

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