

BAM-E028 MDR

Safety Data Sheet

according to Regulation (EU) 2020/878

Date of issue: 20.08.2021

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Version/replaced version: 1.2/1.1



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

1.1. Product identifier

Product form : Mixture
Product name : BAM-E028 MDR

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

1.2.1. Relevant identified uses

Use of the substance/mixture : RM for rotorless curemeter (MDR) according to ISO 6502-1

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Bundesanstalt für Materialforschung und -prüfung (BAM)
Unter den Eichen 87
12205 Berlin - Germany
T +49 (0) 30 8104-3230, -1749
F +49 (0) 30 8104-3328
crm-elastomer@bam.de - <http://www.webshop.bam.de/>

Safety Data Sheet: DLAC Dienstleistungsagentur Chemie GmbH, E-mail: sds@dlac-gmbh.de

1.4. Emergency telephone number

Country	Organisation/Company	Address	Emergency number
Germany	Giftnotruf der Charité Universitätsmedizin Berlin	Oranienburger Straße 285 13437 Berlin	+49 30 30686700 (German, English) only in Germany; in all other cases use the information below

Information on national poison control centres within the EU can be found under the member states information on their national helpdesks:

<http://echa.europa.eu/de/support/helpdesks/national-helpdesks/list-of-national-helpdesks>

Global information on poison centres can be found at the WHO homepage: http://www.who.int/gho/phe/chemical_safety/poisons_centres/en/

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Sensitisation — Skin, Category 1 H317

Hazardous to the aquatic environment — Chronic Hazard, Category 2 H411

Full text of H-phrases: see section 16

Adverse physicochemical, human health and environmental effects

May cause an allergic skin reaction. Toxic to aquatic life with long lasting effects.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Not required, mixture containing elastomer which does not present a hazard to human health by inhalation, ingestion or contact with skin or to the aquatic environment. Exception to the labelling requirement according to Annex I, 1.3.4.1.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Carbon black	(CAS No) 1333-86-4 (EC No) 215-609-9	30 - 50	Not classified

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Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Zinc oxide	(CAS No) 1314-13-2 (EC No) 215-222-5 (EC index No) 030-013-00-7 (REACH No) 01-2119463881-32-XXXX	1 - 5	Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Sulfur	(CAS No) 7704-34-9 (EC No) 231-722-6 (EC index No) 016-094-00-1 (REACH No) 01-2119487295-27-XXXX	1 - 3	Flam. Sol. 2, H228 Skin Irrit. 2, H315
N-isopropyl-N'-phenyl-p-phenylenediamine	(CAS No) 101-72-4 (EC No) 202-969-7 (EC index No) 612-136-00-3	1 - 2	Acute Tox. 4 (Oral), H302 Skin Sens. 1, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Di(benzothiazol-2-yl) disulphide	(CAS No) 120-78-5 (EC No) 204-424-9 (EC index No) 613-135-00-0	1 - 2	Skin Sens. 1, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
N-(cyclohexylthio)phthalimide	(CAS No) 17796-82-6 (EC No) 241-774-1	< 1	Skin Sens. 1, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
N-1,3-dimethylbutyl-N'-phenyl-p-phenylenediamine	(CAS No) 793-24-8 (EC No) 212-344-0 (REACH No) 01-2119485839-15-XXXX	< 0.3	Acute Tox. 4 (Oral), H302 Repr. 1B, H360 Skin Sens. 1, H317 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410 (M=10)
Thiram (ISO), tetramethylthiuram disulphide	(CAS No) 137-26-8 (EC No) 205-286-2 (EC index No) 006-005-00-4	< 0.3	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 (M=10)
Name	Product identifier	Specific concentration limits	
N-isopropyl-N'-phenyl-p-phenylenediamine	(CAS No) 101-72-4 (EC No) 202-969-7 (EC index No) 612-136-00-3	(C ≥ 0.1) Skin Sens. 1, H317	

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Remove to fresh air and keep at rest in a position comfortable for breathing.
- First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical advice/attention.
- First-aid measures after eye contact : IF IN EYES: 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.
- First-aid measures after ingestion : Rinse mouth. Give 2-3 glasses of water to drink. Call a POISON CENTER/doctor/physician if you feel unwell.

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

- Symptoms/injuries after skin contact : May cause an allergic skin reaction.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Foam. Extinguishing powder. Carbon dioxide. Water spray. Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Avoid contact with skin and eyes. Avoid breathing dust.

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent soil and water pollution. Prevent entry to sewers and public waters. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : On land, sweep or shovel into suitable containers. Keep in suitable, closed containers for disposal.

6.4. Reference to other sections

Concerning personal protective equipment to use, see section 8. Concerning disposal elimination after cleaning, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Provide adequate ventilation. Avoid breathing dust.

Hygiene measures : When using do not eat, drink or smoke. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in original container. Store in dry, cool, well-ventilated area. Keep container closed when not in use. Store in a dark area.

Incompatible materials : Keep out of direct sunlight. Keep away from any flames or sparking source.

Prohibitions on mixed storage : Keep away from food, drink and animal feedingstuffs.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Zinc oxide (1314-13-2)		
Ireland	Local name	Zinc oxide, fume
Ireland	OEL (8 hours ref) (mg/m ³)	2 (R) mg/m ³
Ireland	OEL (15 min ref) (mg/m ³)	10 mg/m ³
United Kingdom	Local name	Dust
United Kingdom	WEL TWA (mg/m ³)	10 mg/m ³ (inhalable) 4 mg/m ³ (respirable)

Carbon black (1333-86-4)		
Ireland	Local name	Carbon black
Ireland	OEL (8 hours ref) (mg/m ³)	3 (I) mg/m ³
United Kingdom	Local name	Carbon black
United Kingdom	WEL TWA (mg/m ³)	3.5 mg/m ³
United Kingdom	WEL STEL (mg/m ³)	7 mg/m ³

Thiram (ISO), tetramethylthiuram disulphide (137-26-8)		
Ireland	Local name	Thiram (ISO)
Ireland	OEL (8 hours ref) (mg/m ³)	0.05 mg/m ³

Zinc oxide (1314-13-2)	
DNEL/DMEL (Workers)	
Long-term - systemic effects, inhalation	5 mg/m ³
Long-term - local effects, inhalation	0.5 mg/m ³
Long-term - systemic effects, dermal	83 mg/kg bodyweight/day
DNEL/DMEL (General population)	

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Zinc oxide (1314-13-2)	
Long-term - systemic effects, dermal	83 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	2.5 mg/m ³
Long-term - systemic effects, oral	0.83 mg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	0.0206 mg/l
PNEC aqua (marine water)	0.0061 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	117.8 mg/kg dwt
PNEC sediment (marine water)	56.5 mg/kg dwt
PNEC (Soil)	
PNEC soil	35.6 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	0.1 mg/l

N-isopropyl-N'-phenyl-p-phenylenediamine (101-72-4)	
DNEL/DMEL (Workers)	
Acute - systemic effects, inhalation	6.4 mg/m ³
Acute - systemic effects, dermal	0.9 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	0.8 mg/m ³
Long-term - systemic effects, dermal	0.113 mg/kg bodyweight/day
DNEL/DMEL (General population)	
Acute - systemic effects, inhalation	1.6 mg/m ³
Acute - systemic effects, dermal	0.5 mg/kg bodyweight/day
Acute - systemic effects, oral	0.5 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	0.2 mg/m ³
Long-term - systemic effects, dermal	0.06 mg/kg bodyweight/day
Long-term - systemic effects, oral	0.06 mg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	0.28 µg/l
PNEC aqua (marine water)	0.028 µg/l
PNEC aqua (intermittent, freshwater)	4.1 µg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	0.008 mg/kg dwt
PNEC sediment (marine water)	0.001 mg/kg dwt
PNEC (Soil)	
PNEC soil	0.001 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	0.344 mg/l

Di(benzothiazol-2-yl) disulphide (120-78-5)	
DNEL/DMEL (Workers)	
Acute - systemic effects, inhalation	70 mg/m ³
Acute - systemic effects, dermal	40 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	8.8 mg/m ³
Long-term - systemic effects, dermal	5 mg/kg bodyweight/day
DNEL/DMEL (General population)	
Acute - systemic effects, inhalation	17.6 mg/m ³
Acute - systemic effects, dermal	20 mg/kg bodyweight/day
Acute - systemic effects, oral	10 mg/kg bodyweight/day
Long-term - systemic effects, oral	1.25 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	2.2 mg/m ³
Long-term - systemic effects, dermal	2.5 mg/kg bodyweight/day
PNEC (Sediment)	
PNEC sediment (freshwater)	0.22 mg/kg dwt
PNEC sediment (marine water)	0.022 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	3.8 mg/l

N-(cyclohexylthio)phthalimide (17796-82-6)	
DNEL/DMEL (Workers)	
Acute - systemic effects, inhalation	1.505 mg/m ³

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N-(cyclohexylthio)phthalimide (17796-82-6)	
Long-term - systemic effects, dermal	0.5 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	0.301 mg/m ³
PNEC (Water)	
PNEC aqua (Süßwasser)	0.001 mg/l
PNEC aqua (Meerwasser)	0 mg/l
PNEC aqua (intermittierend, Süßwasser)	0.004 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	0.048 mg/kg dwt
PNEC sediment (marine water)	0.01 mg/kg dwt
PNEC (Soil)	
PNEC soil	0.009 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	0.013 mg/l

N-1,3-dimethylbutyl-N'-phenyl-p-phenylenediamine (793-24-8)	
DNEL/DMEL (Workers)	
Acute - systemic effects, inhalation	3.45 mg/m ³
Acute - systemic effects, dermal	0.95 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	0.69 mg/m ³
Long-term - systemic effects, dermal	0.19 mg/kg bodyweight/day
DNEL/DMEL (General Population)	
Acute - systemic effects, inhalation	0.5 mg/m ³
Acute - systemic effects, dermal	0.35 mg/kg bodyweight/day
Acute - systemic effects, oral	0.35 mg/kg bodyweight/day
Long-term - systemic effects, oral	0.07 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	0.1 mg/m ³
Long-term - systemic effects, dermal	0.07 mg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	0.37 µg/l
PNEC aqua (marine water)	0.037 µg/l
PNEC aqua (intermittent, freshwater)	0.28 µg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	0.11 mg/kg dwt
PNEC sediment (marine water)	0.011 mg/kg dwt
PNEC (Soil)	
PNEC soil	1.64 mg/kg dwt
PNEC (Oral)	
PNEC oral (secondary poisoning)	1.33 mg/kg food

Thiram (ISO), tetramethylthiuram disulphide (137-26-8)	
DNEL/DMEL (Workers)	
Acute - systemic effects, dermal	10 mg/kg bodyweight/day
Acute - systemic effects, inhalation	0.564 mg/m ³
Long-term - systemic effects, dermal	1.6 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	0.118 mg/m ³
PNEC (Water)	
PNEC aqua (Süßwasser)	0 mg/l
PNEC aqua (Meerwasser)	0 mg/l
PNEC aqua (intermittierend, Süßwasser)	0 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	0.047 mg/kg dwt
PNEC sediment (marine water)	0.005 mg/kg dwt
PNEC (Soil)	
PNEC soil	0.009 mg/kg dwt
PNEC (Oral)	
PNEC oral (secondary poisoning)	0.59 mg/kg food
PNEC (STP)	
PNEC sewage treatment plant	0.031 mg/l

8.2. Exposure controls

Appropriate engineering controls : Provide local exhaust or general room ventilation.

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Hand protection	: Wear suitable gloves. Chemical resistant PVC gloves (to European standard EN 374 or equivalent). Latex. Nitrile rubber. The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
Eye protection	: Chemical goggles or safety glasses (EN 166).
Skin and body protection	: Wear suitable protective clothing.
Respiratory protection	: In case of inadequate ventilation wear respiratory protection. Dust production: dust mask with filter type P1.
Environmental exposure controls	: Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Colour	: Black
Odour	: Odourless
Melting point/freezing point	: No data available
Boiling point or initial boiling point and boiling range	: No data available
Flammability	: No data available
Lower and upper explosion limit	: Not applicable
Flash point	: Not applicable
Auto-ignition temperature	: Not applicable
Decomposition temperature	: No data available
pH	: No data available
Kinematic viscosity	: Not applicable
Solubility	: No data available
Partition coefficient n-octanol/water (log value)	: Not applicable
Vapour pressure	: No data available
Density and/or relative density	: No data available
Relative vapour density	: Not applicable
Particle characteristics	: No data available

9.2. Other information

Explosive properties	: No data available
Oxidising properties	: No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known.

10.2. Chemical stability

Stable under use and storage conditions as recommended in section 7.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Extremely high or low temperatures.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

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

Acute toxicity	: Not classified
	Based on available data, the classification criteria are not met

Zinc oxide (1314-13-2)	
LD50 oral rat	> 2000 mg/kg (OECD 401)
LD50 dermal rat	> 2000 mg/kg (OECD 402)
LC50 inhalation rat (mg/l)	> 5.7 mg/l/4h (OECD 403)
Sulfur (7704-34-9)	
LD50 oral rat	> 2000 mg/kg (OECD 401)

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Sulfur (7704-34-9)	
LD50 dermal rat	> 2000 mg/kg (OECD 402)
LC50 inhalation rat (Dust/Mist)	> 5.43 g/m ³ /4h

Carbon black (1333-86-4)	
LD50 oral rat	> 8000 mg/kg

N-isopropyl-N'-phenyl-p-phenylenediamine (101-72-4)	
LD50 oral rat	522 mg/kg (OECD 401)
LD50 dermal rabbit	> 7940 mg/kg

Di(benzothiazol-2-yl) disulphide (120-78-5)	
LD50 oral rat	> 7940 mg/kg
LD50 dermal rabbit	> 7940 mg/kg

N-1,3-dimethylbutyl-N'-phenyl-p-phenylenediamine (793-24-8)	
LD50 oral rat	893 - 1005 mg/kg (OECD 401)
LD50 dermal rabbit	> 7940 mg/kg

Thiram (ISO), tetramethylthiuram disulphide (137-26-8)	
LD50 oral rat	1850 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat (Dust/Mist)	4.42 mg/l/4h

Skin corrosion/irritation	: Not classified Based on available data, the classification criteria are not met
Serious eye damage/irritation	: Not classified Based on available data, the classification criteria are not met
Respiratory or skin sensitisation	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified Based on available data, the classification criteria are not met
Carcinogenicity	: Not classified Based on available data, the classification criteria are not met

N-1,3-dimethylbutyl-N'-phenyl-p-phenylenediamine (793-24-8)	
NOAEL (chronic, oral, female/male)	84.8 - 109.5 mg/kg bodyweight
Reproductive toxicity	: Not classified Based on available data, the classification criteria are not met
Specific target organ toxicity (single exposure)	: Not classified Based on available data, the classification criteria are not met

N-1,3-dimethylbutyl-N'-phenyl-p-phenylenediamine (793-24-8)	
LOAEL (oral, rat)	100 mg/kg bodyweight, 28 d
NOAEL (oral, rat)	20 mg/kg bodyweight, 28 d
Specific target organ toxicity (repeated exposure)	: Not classified Based on available data, the classification criteria are not met

Carbon black (1333-86-4)	
NOAEC (inhalation, rat, dust/mist/fume, 90 days)	1.1 mg/m ³ /6h
Aspiration hazard	: Not classified Based on available data, the classification criteria are not met

11.2. Information on other hazards

Potential adverse human health effects and symptoms	: Based on available data, the classification criteria are not met
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SECTION 12: Ecological information

12.1. Toxicity

Acute aquatic toxicity	: Not classified
Chronic aquatic toxicity	: Toxic to aquatic life with long lasting effects.

Zinc oxide (1314-13-2)	
LC50 fish	0.5 mg/l 96 h, Pimephales promelas (Schubauer-Berrigan, 1993)
EC50 daphnia	0.413 mg/l pH < 7; Zn ⁺⁺ ; 48 h, Ceriodaphnia dubia (Hyne et al., 2005)
ErC50 algae	0.136 mg/l pH > 7 - 8.5; Zn ⁺⁺ , 72 h, Selenastrum capricornutum (Van Ginneken, 1994)

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Carbon black (1333-86-4)	
LC50 fish	> 1000 mg/l 96 h, Brachydanio rerio (OECD 203)
EC50 daphnia	> 5600 mg/l 24 h, Daphnia magna (OECD 202)
ErC50 algae	> 10000 mg/l 72 h, Scenedesmus subspicatus (OECD 201)
NOEC algae	> 10000 mg/l 72 h, Scenedesmus subspicatus (OECD 201)

N-isopropyl-N'-phenyl-p-phenylenediamine (101-72-4)	
LC50 fish	0.41 mg/l 96 h, Pimephales promelas (OECD 204)
EC50 daphnia	0.69 mg/l 48 h, Daphnia magna (EU C.2)
ErC50 algae	2.6 mg/l 72 h, Desmodesmus subspicatus (OECD 201)
LOEC daphnia	0.087 mg/l 21 d, Daphnia magna (OECD 211)
NOEC daphnia	0.028 mg/l 21 d, Daphnia magna (OECD 211)
NOEC algae	0.23 mg/l 72 h, Desmodesmus subspicatus (OECD 201)

Di(benzothiazol-2-yl) disulphide (120-78-5)	
LC50 fish	< 1 mg/l 96 h, Oncorhynchus mykiss (OECD 203)
EC50 daphnia	211 mg/l 48 h, Daphnia magna (EU C.2)
ErC50 algae	> 40 mg/l 72 h, Desmodesmus subspicatus (EU C.3)
NOEC algae	≥ 40 mg/l 72 h, Desmodesmus subspicatus (EU C.3)

N-1,3-dimethylbutyl-N'-phenyl-p-phenylenediamine (793-24-8)	
LC50 fish	0.028 mg/l 96 h, Oryzias latipes (OECD 203)
EC50 Daphnia	0.23 mg/l 48 h, Daphnia magna (OECD 202)
ErC50 algae	2.6 mg/l 72 h, Desmodesmus subspicatus (OECD 201)
LOEC crustacea	0.087 mg/l 21 d, Daphnia magna (OECD 211)
NOEC algae	0.23 mg/l 72 h, Desmodesmus subspicatus (OECD 201)
NOEC fish	0.004 mg/l 30 d, Oryzias latipes (OECD 210)
NOEC crustacea	0.028 mg/l 21 d, Daphnia magna (OECD 211)

Thiram (ISO), tetramethylthiuram disulphide (137-26-8)	
LC50 fish	0.046 mg/l 96 h, Oncorhynchus mykiss (OECD 203)
EC50 daphnia	0.38 mg/l 48 h, Daphnia magna (OECD 202)
ErC50 algae	0.065 mg/l 72 h, Pseudokirchneriella subcapitata (OECD 201)

12.2. Persistence and degradability

BAM-E028 MDR	
Persistence and degradability	May cause long-term adverse effects in the environment.

N-isopropyl-N'-phenyl-p-phenylenediamine (101-72-4)	
Persistence and degradability	Not readily biodegradable.
Biodegradation	18.9 %, 32 d (OECD 301 B)

di(benzothiazol-2-yl) disulphide (120-78-5)	
Persistence and degradability	Not readily biodegradable.
Biodegradation	0 %, 28 d (OECD 301 C)

N-1,3-dimethylbutyl-N'-phenyl-p-phenylenediamine (793-24-8)	
Persistence and degradability	Not readily biodegradable.
Biodegradation	2 % 28 d (OECD 301 C)

Thiram (ISO), tetramethylthiuram disulphide (137-26-8)	
Persistence and degradability	Not readily biodegradable.
Biodegradation	40 %, 28 d (OECD 301 D)

12.3. Bioaccumulative potential

N-isopropyl-N'-phenyl-p-phenylenediamine (101-72-4)	
Log Pow	2.77

Di(benzothiazol-2-yl) disulphide (120-78-5)	
Bioconcentration factor (BCF REACH)	≤ 51
Log Pow	4.5

N-1,3-dimethylbutyl-N'-phenyl-p-phenylenediamine (793-24-8)	
Log Pow	4.68

Thiram (ISO), tetramethylthiuram disulphide (137-26-8)	
Log Pow	1.8

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12.4. Mobility in soil

N-isopropyl-N'-phenyl-p-phenylenediamine (101-72-4)

Log Koc : 2.39 - 3.64

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste) : Disposal must be done according to official regulations.
Waste treatment methods : This material and its container must be disposed of in a safe way. Do not dispose of with domestic waste. Do not empty into drains.
European List of Waste (LoW) code : 07 02 13 - waste plastic

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA

14.1. UN number or ID number

UN-No. (ADR) : 3077
UN-No. (IMDG) : 3077
UN-No.(IATA) : 3077

14.2. UN proper shipping name

Proper Shipping Name (ADR) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Proper Shipping Name (IMDG) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Proper Shipping Name (IATA) : Environmentally hazardous substance, solid, n.o.s.
Transport document description (ADR) : UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS zinc oxide), 9, III, (-)

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR) : 9
Hazard labels (ADR) : 9



IMDG

Transport hazard class(es) (IMDG) : 9
Danger labels (IMDG) : 9



IATA

Transport hazard class(es) (IATA) : 9
Hazard labels (IATA) : 9

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14.4. Packing group

Packing group (ADR)	: III
Packing group (IMDG)	: III
Packing group (IATA)	: III

14.5. Environmental hazards

Dangerous for the environment	: Yes
Marine pollutant	: Yes
Other information	: No supplementary information available

14.6. Special precautions for user

14.6.1. Overland transport

Classification code (ADR)	: M7
Special provisions (ADR)	: 274, 335, 375, 601
Limited quantities (ADR)	: 5kg
Excepted quantities (ADR)	: E1
Packing instructions (ADR)	: P002, IBC08, LP02, R001
Special packing provisions (ADR)	: PP12, B3
Mixed packing provisions (ADR)	: MP10
Portable tank and bulk container instructions (ADR)	: T1, BK1, BK2, BK3
Portable tank and bulk container special provisions (ADR)	: TP33
Tank code (ADR)	: SGAV, LGBV
Vehicle for tank carriage	: AT
Transport category (ADR)	: 3
Special provisions for carriage - Packages (ADR)	: V13
Special provisions for carriage - Bulk (ADR)	: VC1, VC2
Special provisions for carriage - Loading, unloading and handling (ADR)	: CV13
Hazard identification number (Kemler No.)	: 90
Orange plates	:



Tunnel restriction code (ADR)	: -
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14.6.2. Transport by sea

Special provisions (IMDG)	: 274, 335, 966, 967, 969
Limited quantities (IMDG)	: 5 kg
Excepted quantities (IMDG)	: E1
Packing instructions (IMDG)	: P002, LP02
Special packing provisions (IMDG)	: PP12
IBC packing instructions (IMDG)	: IBC08
IBC special provisions (IMDG)	: B3
Tank instructions (IMDG)	: T1, BK1, BK2, BK3
Tank special provisions (IMDG)	: TP33
EmS-No. (Fire)	: F-A
EmS-No. (Spillage)	: S-F
Stowage category (IMDG)	: A
Stowage and handling (IMDG)	: SW23

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14.6.3. Air transport

PCA Excepted quantities (IATA)	: E1
PCA Limited quantities (IATA)	: Y956
PCA limited quantity max net quantity (IATA)	: 30kgG
PCA packing instructions (IATA)	: 956
PCA max net quantity (IATA)	: 400kg
CAO packing instructions (IATA)	: 956
CAO max net quantity (IATA)	: 400kg
Special provisions (IATA)	: A97, A158, A179, A197
ERG code (IATA)	: 9L

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

15.1.1. EU-Regulations

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

Data sources	: REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.
Changes compared to the previous version	: Section 1.4. Section 2.2.

Abbreviations and acronyms:

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
DMEL	Derived Minimal Effect Level
DNEL	Derived No-Effect Level
EC50	The effective concentration of substance that causes 50% of the maximum response (Median Effective Concentration)
IATA	International Air Transport Association
IMDG	"International Maritime Dangerous Goods Code" for the transport of dangerous goods by sea
LC50	Lethal Concentration to 50 % of a test population (Median Lethal Concentration)
LD50	Lethal Dose to 50% of a test population (Median Lethal Dose)
NOEC/L	No Observed Effect Concentration/Level
OECD	Organisation for Economic Cooperation and Development
PBT	Persistent, Bioaccumulative and Toxic substance
PNEC	Predicted No-Effect Concentration
REACH	Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
SDS	Safety Data Sheet
STP	Sewage Treatment Plant
vPvB	Very Persistent and Very Bioaccumulative

Full text of H- and EUH-phrases:

Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Acute Tox. 4 (Inhalation)	Acute toxicity (inhalation) Category 4
Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Sol. 2	Flammable solids, Category 2
Repr. 1B	Reproductive toxicity, Category 1B
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Sensitisation — Skin, category 1

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STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
H228	Flammable solid
H302	Harmful if swallowed
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H332	Harmful if inhaled
H360	May damage fertility or the unborn child
H373	May cause damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H411	Toxic to aquatic life with long lasting effects

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.