

SAFETY DATA SHEET

Based on Directive 2001/58/EC of the Commission of the European Communities

ENAMO GRIP

1. Identification of the substance/preparation and of the company/undertaking

1.1 Identification of the substance or preparation:

Product name: ENAMO GRIP
Synonyms: none

CAS No.	: N.A.	NFPA code	: N.D.
EC index No.	: N.A.	Molecular weight	: N.A.
EINECS No.	: N.A.	Formula	: N.A.
RTECS No.	: N.A.		

1.2 Use of the substance or the preparation:

Coating
Professional use

1.3 Company/undertaking identification:

Superior Coatings & Concrete Trading
Singel 12A
NL-7411 HV Deventer
Tel. : +31 570 67 29 71
Fax : +31 570 67 03 43
Email: info@sc2trading.com

1.4 Telephone number for emergency:

See 1.3

2. Composition/information on ingredients

Hazardous ingredients	CAS No. EINECS/ELINCS No.	Conc. in %	Hazard symbol	Risks (R-phrases)
n-butyl acetate	123-86-4 204-658-1	15	-	10-66-67 (1)
4-methylpentan-2-one	108-10-1 203-550-1	8.87	F+Xn	11-20-36/37-66 (1)
toluene	108-88-3 203-625-9	9.58	F+Xn	11-38-48/20-63-65-67 (1)
ethyl 3-ethoxypropionate	763-69-9 212-112-9	5.57	Xi	36 (1)
ethyl acetate	141-78-6 205-500-4	12.97	F+Xi	11-36-66-67 (1)
hexamethylene diisocyanate, oligomers	28182-81-2 500-060-2	13	Xi	43 (1)

(1) For R-phrases in full: see heading 16

3. Hazards identification

- Highly flammable
- Irritating to eyes
- May cause sensitisation by skin contact
- Possible risk of harm to the unborn child
- Repeated exposure may cause skin dryness or cracking
- Vapours may cause drowsiness and dizziness

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4. First aid measures

- 4.1 Eye contact:**
- Rinse immediately with plenty of water
 - Do not apply neutralizing agents
 - Take victim to an ophthalmologist if irritation persists
- 4.2 Skin contact:**
- Wash immediately with lots of water
 - Soap may be used
 - Take victim to a doctor if irritation persists
- 4.3 After inhalation:**
- Remove the victim into fresh air
 - Respiratory problems: consult a doctor/medical service
- 4.4 After ingestion:**
- Rinse mouth with water
 - Immediately give lots of water to drink
 - Do not induce vomiting
 - Consult a doctor/medical service if you feel unwell

5. Fire-fighting measures

- 5.1 Suitable extinguishing media:**
- Water spray
 - Polyvalent foam
 - BC powder
 - Carbon dioxide
- 5.2 Unsuitable extinguishing media:**
- No data available
- 5.3 Special exposure hazards:**
- Gas/vapour spreads at floor level: ignition hazard
 - Gas/vapour flammable with air within explosion limits
 - On burning: release of toxic and corrosive gases/vapours nitrous vapours, carbon monoxide - carbon dioxide
- 5.4 Instructions:**
- If exposed to fire cool the closed containers by spraying with water
 - Dilute toxic gases with water spray
 - Take account of environmentally hazardous firefighting water
- 5.5 Special protective equipment for firefighters:**
- Heat/fire exposure: compressed air/oxygen apparatus
 - Large spills/in enclosed spaces: compressed air apparatus

6. Accidental release measures

- 6.1 Personal protection/precautions:**
See heading 8.2/13
- 6.2 Environmental precautions:**
- Prevent soil and water pollution
 - Prevent spreading in sewers
 - Contain leaking substance
 - Dam up the liquid spill
 - Try to reduce evaporation
- 6.3 Methods for cleaning up:**
- Take up liquid spill into a non combustibile material e.g.: sand, earth, vermiculite
 - Scoop absorbed substance into closing containers
 - Carefully collect the spill/leftovers
 - Clean contaminated surfaces with an excess of water
 - Take collected spill to manufacturer/competent authority
 - Wash clothing and equipment after handling

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7. Handling and storage

7.1 Handling:

- Observe very strict hygiene - avoid contact
- Use spark-/explosionproof appliances and lighting system
- Take precautions against electrostatic charges
- Handle uncleaned empty containers as full ones
- Do not discharge the waste into the drain

7.2 Storage:

- Keep container tightly closed
- Protect against frost
- Meet the legal requirements
- Keep away from: heat sources, ignition sources, bases, alcohols, amines

Storage temperature	: 0/50	°C
Quantity limits	: N.D.	kg
Storage life	: N.D.	days
Materials for packaging	:	
- suitable	: metal	
- to avoid	: no data available	

7.3 Specific uses:

- See information supplied by the manufacturer

8. Exposure controls/Personal protection

8.1 Exposure limit values:

n-butyl acetate

TLV-TWA	:	mg/m ³	150	ppm
TLV-STEL	:	mg/m ³	200	ppm
MAK	: 480	mg/m ³	100	ppm
MAC-TGG 8 h	: 480	mg/m ³		
VME-8 h	: 710	mg/m ³	150	ppm
VLE-15 min.	: 940	mg/m ³	200	ppm
GWBB-8 h	: 723	mg/m ³	150	ppm
GWK-15 min.	: 964	mg/m ³	200	ppm

4-methylpentan-2-one

TLV-TWA	:	mg/m ³	50	ppm
TLV-STEL	:	mg/m ³	75	ppm
WEL-LTEL	: 208	mg/m ³	50	ppm
WEL-STEL	: 416	mg/m ³	100	ppm
MAK	: 83	mg/m ³	20	ppm
MAC-TGG 8 h	: 104	mg/m ³		
MAC-TGG 15 min.	: 208	mg/m ³		
MAC-Ceiling	:	mg/m ³		
GWBB-8 h	: 83	mg/m ³	20	ppm
GWK-15 min.	: 208	mg/m ³	50	ppm
Momentary value	:	mg/m ³		ppm
EC	: 83	mg/m ³	20	ppm
EC-STEL	: 208	mg/m ³	50	ppm

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toluene

TLV-TWA	:		mg/m ³	(50)		ppm
TLV-STEL	:		mg/m ³	(-)		ppm
WEL-LTEL	:	191	mg/m ³	50		ppm
WEL-STEL	:	574	mg/m ³	150		ppm
MAK	:	190	mg/m ³	50		ppm
MAC-TGG 8 h	:	150	mg/m ³			
MAC-TGG 15 min.	:	384	mg/m ³			
VME-8 h	:	375	mg/m ³	100		ppm
VLE-15 min.	:	550	mg/m ³	150		ppm
GWBB-8 h	:	191	mg/m ³	50		ppm
GWK-15 min.	:	-	mg/m ³	-		ppm
EC	:	192	mg/m ³	50		ppm
EC-STEL	:	384	mg/m ³	100		ppm

ethyl acetate

TLV-TWA	:		mg/m ³	400		ppm
TLV-STEL	:		mg/m ³	-		ppm
WEL-LTEL	:	-	mg/m ³	200		ppm
WEL-STEL	:	-	mg/m ³	400		ppm
MAK	:	1500	mg/m ³	400		ppm
MAC-TGG 8 h	:	550	mg/m ³			
MAC-TGG 15 min.	:	1100	mg/m ³			
MAC-Ceiling	:		mg/m ³			
VME-8 h	:	1400	mg/m ³	400		ppm
VLE-15 min.	:	-	mg/m ³	-		ppm
GWBB-8 h	:	1461	mg/m ³	400		ppm
GWK-15 min.	:	-	mg/m ³	-		ppm

Sampling methods:

- n-Butyl Acetate (Esters I)	NIOSH 1450
- n-Butyl Acetate	OSHA 7
- Methyl Isobutyl Ketone (Hexone) (Ketones I)	NIOSH 1300
- Methyl Isobutyl Ketone (Hexone)	OSHA 7
- Toluene (Hydrocarbons, aromatic)	NIOSH 1501
- Toluene	NIOSH 4000
- Toluene	OSHA CSI
- Toluene	NIOSH 1500
- Toluene	OSHA 07
- Ethyl Acetate	NIOSH 1457
- Ethyl Acetate	OSHA 7

8.2 Exposure controls:

8.2.1 Occupational exposure controls:

- Measure the concentration in the air regularly
- Work under local exhaust/ventilation

8.2.1.1 Respiratory protection:

- Wear gas mask with filter type A if conc. in air > exposure limit

8.2.1.2 Hand protection:

- Gloves
- Suitable materials: No data available
- Breakthrough time: N.D.

8.2.1.3 Eye protection:

- Protective goggles

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8.2.1.4 Skin protection:

- Head/neck protection
 - Protective clothing
- Suitable materials: No data available

8.2.2 Environmental exposure controls: see heading 13

9. Physical and chemical properties

9.1 General information:

Appearance (at 20°C)	: Liquid
Odour	: Solvent
Colour	: Variable in colour, depending on the composition

9.2 Important health, safety and environmental information:

pH value	: N.D.	
Boiling point/boiling range	: N.D.	°C
Flashpoint	: 2	°C
Explosion limits	: 1.4 /	vol%
Vapour pressure (at 20°C)	: N.D.	hPa
Vapour pressure (at 50°C)	: N.D.	hPa
Relative density (at 20°C)	: 1.0	
Water solubility	: Insoluble	
Soluble in	: N.D.	
Relative vapour density	: > 1.2	
Viscosity	: N.D.	Pa.s
Partition coefficient n-octanol/water	: N.D.	
Evaporation rate		
ratio to butyl acetate	: N.D.	
ratio to ether	: N.D.	

9.3 Other information:

Melting point/melting range	: N.D.	°C
Auto-ignition point	: 350	°C
Saturation concentration	: N.D.	g/m ³

10. Stability and reactivity

10.1 Conditions to avoid:

- Stable under normal conditions

10.2 Materials to avoid:

- Keep away from: heat sources, ignition sources, bases, alcohols, amines

10.3 Hazardous decomposition products:

- On burning: release of toxic and corrosive gases/vapours nitrous vapours, carbon monoxide - carbon dioxide

11. Toxicological information

11.1 Acute toxicity:

n-butyl acetate

LD50 oral rat	: 10770	mg/kg
LD50 dermal rabbit	: > 17600	mg/kg

4-methylpentan-2-one

LD50 oral rat	: 2080	mg/kg
LD50 dermal rabbit	: > 16000	mg/kg
LC50 inhalation rat	: 8/16	mg/l/4 h
LC50 inhalation rat	: 2000/4000	ppm/4 h

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toluene

LD50 oral rat : > 2000 mg/kg
LD50 dermal rabbit : 12223 mg/kg
LC50 inhalation rat : > 20 mg/l/4 h

ethyl 3-ethoxypropionate

LD50 oral rat : 5000 mg/kg
LD50 dermal rabbit : 4076 mg/kg

ethyl acetate

LD50 oral rat : 5620 mg/kg
LD50 dermal rabbit : > 18000 mg/kg

11.2 Chronic toxicity:

n-butyl acetate

Teratogenicity (MAK) : C

4-methylpentan-2-one

Teratogenicity (MAK) : C

toluene

EC repr. cat. : 3
Carcinogenicity (TLV) : A4
Teratogenicity (MAK) : C
IARC classification : 3

ethyl acetate

Teratogenicity (MAK) : C

11.3 Routes of exposure: ingestion, inhalation, eyes and skin

11.4 Acute effects/symptoms:

- AFTER INHALATION
- EXPOSURE TO HIGH CONCENTRATIONS:
 - Coughing
 - Narcosis
- AFTER INGESTION
 - Risk of aspiration pneumonia
- AFTER SKIN CONTACT
 - ON CONTINUOUS EXPOSURE/CONTACT:
 - Dry skin
 - Cracking of the skin
- AFTER EYE CONTACT
 - Irritation of the eye tissue

11.5 Chronic effects:

- May cause sensitization by skin contact
- Possibly hazardous to the foetus
- Not listed in carcinogenicity class (IARC,EC,TLV,MAK)
- Not listed in mutagenicity class (EC,MAK)
- ON CONTINUOUS/REPEATED EXPOSURE/CONTACT:
 - Skin rash/inflammation

12. Ecological information

12.1 Ecotoxicity:

n-butyl acetate:

- LC50 (96 h) : 62 mg/l (BRACHYDANIO RERIO)
- EC50 (24 h) : 24/205 mg/l (DAPHNIA MAGNA)
- EC50 (72 h) : 675 mg/l (SCENEDESMUS SUBSPICATUS)

4-methylpentan-2-one:

- LC50 (96 h) : 600 mg/l (SALMO GAIRDNERI/ ONCORHYNCHUS MYKISS)
- EC50 (48 h) : 170 mg/l (DAPHNIA MAGNA)
- EC50 (48 h) : 980 mg/l (SCENEDESMUS SUBSPICATUS)

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toluene:

- LC50 (96 h) : 24 mg/l (SALMO GAIRDNERI/ ONCORHYNCHUS MYKISS)
- EC50 (48 h) : 11.5/19.6 mg/l (DAPHNIA MAGNA)
- EC50 (72 h) : 12.5 mg/l (SELENASTRUM CAPRICORNUTUM)

ethyl 3-ethoxypropionate:

- LC50 (96 h) : 143.63 mg/l (SALMO GAIRDNERI/ ONCORHYNCHUS MYKISS)
- LC50 (96 h) : 123.4 mg/l (DAPHNIA MAGNA)
- LC50 (96 h) : 149.83 mg/l (LEPOMIS MACROCHIRUS)

ethyl acetate:

- LC50 (96 h) : 454.7 mg/l (SALMO GAIRDNERI/ ONCORHYNCHUS MYKISS)
- EC50 (48 h) : 154 mg/l (DAPHNIA MAGNA)
- EC50 (48 h) : 3300 mg/l (SCENEDESMUS SUBSPICATUS)

12.2 Mobility:

- Volatile organic compounds (VOC): 52%
- Insoluble in water

For other physicochemical properties see heading 9

12.3 Persistence and degradability:

- biodegradation BOD₅ : N.D. % ThOD
- water : - No data available
- soil : T ½: N.D. days

12.4 Bioaccumulative potential:

- log P_{ow} : N.D.
- BCF : N.D.

12.5 Other adverse effects:

- WGK : 2 (Classification based on the components in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 17 May 1999)
- Effect on the ozone layer : Not dangerous for the ozone layer (1999/45/EC)
- Greenhouse effect : no data available
- Effect on waste water purification : no data available

13. Disposal considerations

13.1 Provisions relating to waste:

- Waste material code (91/689/EEC, Council Decision 2001/118/EC, O.J. L47 of 16/2/2001): 08 01 11* (waste paint and varnish containing organic solvents or other dangerous substances)
- Hazardous waste (91/689/EEC)

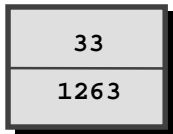
13.2 Disposal methods:

- Incinerate under surveillance
- Do not discharge into drains or the environment
- Contains a component for which a prohibition exists against discharge into surface water

13.3 Packaging/Container:

- Waste material code packaging (91/689/EEC, Council Decision 2001/118/EC, O.J. L47 of 16/2/2001): 15 01 10* (packaging containing residues of or contaminated by dangerous substances)

14. Transport information



14.1 Classification of the substance in compliance with UN Recommendations

```

UN number           : 1263
CLASS               : 3
SUB RISKS           : -
PACKING             : II
PROPER SHIPPING NAME :
UN 1263, Paint related material, Special provision 640D
    
```

14.2 ADR (transport by road)

```

CLASS               : 3
PACKING             : II
CLASSIFICATION CODE : F1
DANGER LABEL TANKS : 3
DANGER LABEL PACKAGES : 3
    
```

14.3 RID (transport by rail)

```

CLASS               : 3
PACKING             : II
CLASSIFICATION CODE : F1
DANGER LABEL TANKS : 3
DANGER LABEL PACKAGES : 3
    
```

14.4 ADNR (transport by inland waterways)

```

CLASS               : 3
PACKING             : II
CLASSIFICATION CODE : F1
DANGER LABEL TANKS : 3
DANGER LABEL PACKAGES : 3
    
```

14.5 IMDG (maritime transport)

```

CLASS               : 3
SUB RISKS           : -
PACKING             : II
MFAG                : -
EMS                 : F-E, S-E
MARINE POLLUTANT    : -
    
```

14.6 ICAO (air transport)

```

CLASS               : 3
SUB RISKS           : -
PACKING             : II
PACKING INSTRUCTIONS PASSENGER AIRCRAFT : 305/Y305
PACKING INSTRUCTIONS CARGO AIRCRAFT     : 307
    
```

14.7 Special precautions in connection with transport

: none

14.8 Limited quantities (LQ)

:

When substances and their packaging meet the conditions established by ADR/RID/ADNR in chapter 3.4, **only** the following prescriptions shall be complied with:

each package shall display a diamond-shaped figure with the following inscription:

- 'UN 1263'

or, in the case of different goods with different identification numbers within a single package:

- the letters 'LQ'

15. Regulatory information

15.1 EU legislation:

Classification according to directives 67/548/EEC and 1999/45/EC



Highly flammable



Harmful

contains: hexamethylene diisocyanate, oligomers; toluene

R11	:	Highly flammable
R36	:	Irritating to eyes
R43	:	May cause sensitisation by skin contact
R63	:	Possible risk of harm to the unborn child
R66	:	Repeated exposure may cause skin dryness or cracking
R67	:	Vapours may cause drowsiness and dizziness
S(02)	:	(Keep out of reach of children)
S36/37	:	Wear suitable protective clothing and gloves
S(46)	:	(If swallowed, seek medical advice immediately and show this container or label)

15.2 National provisions:

The Netherlands:
Waterbezwaarlijkheid: 11

16. Other information

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information 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.

N.A. = NOT APPLICABLE
N.D. = NOT DETERMINED
(*) = INTERNAL CLASSIFICATION (NFPA)

Exposure limits:

TLV : Threshold Limit Value - ACGIH USA
WEL : Workplace Exposure Limits - United Kingdom
MAK : Maximale Arbeitsplatzkonzentrationen - Germany
MAC : Maximale aanvaarde concentratie - The Netherlands
VME : Valeurs limites de Moyenne d'Exposition - France
VLE : Valeurs limites d'Exposition à court terme - France
GWBB : Grenswaarde beroepsmatige blootstelling - Belgium
GWK : Grenswaarde kortstondige blootstelling - Belgium
EC : Indicative occupational exposure limit values - directive 2000/39/EC

I : Inhalable fraction = **T**: Total dust = **E**: Einatembarer Aerosolanteil
R : Respirable fraction = **A**: Alveolengängiger Aerosolanteil/Alveolar dust
C : Ceiling limit

a:	aerosol	r:	rook/Rauch	(fume)
d:	damp (vapour)	st:	stof/Staub	(dust)
du:	dust	ve:	vezel	(fibre)
fa:	Faser (fibre)	va:	vapour	
fi:	fibre	om:	oil mist	
fu:	fume	on:	olienevel/Ölnebel	(oil mist)
p:	poussière (dust)	part:	particles	

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Chronic toxicity:

K : List of the carcinogenic substances and processes - The Netherlands

Full text of any R-phrases referred to under heading 2:

R10 : Flammable
R11 : Highly flammable
R20 : Harmful by inhalation
R36 : Irritating to eyes
R36/37 : Irritating to eyes and respiratory system
R38 : Irritating to skin
R43 : May cause sensitisation by skin contact
R48/20 : Harmful: danger of serious damage to health by prolonged exposure through inhalation
R63 : Possible risk of harm to the unborn child
R65 : Harmful: may cause lung damage if swallowed
R66 : Repeated exposure may cause skin dryness or cracking
R67 : Vapours may cause drowsiness and dizziness