

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

### 1.1 Product identifier

- Trade name: **PEROXAN AIVN-PG**
- CAS Number: 13472-08-7
- EC number: 236-740-8
- Registration number: 01-2119970183-38
- 1.2 Relevant identified uses of the substance or mixture and uses advised against  
No further relevant information available.

### Application of the substance / the mixture

Reaction initiator  
For industrial use

### 1.3 Details of the supplier of the safety data sheet

- Manufacturer/Supplier: PERGAN GmbH  
Hilfsstoffe für industrielle Prozesse  
Schlavenhorst 71  
D-46395 Bocholt  
Tel: +49 2871 9902-0  
Fax: +49 2871 9902-50

### Further information obtainable from:

Environment protection / Security of labour  
Competent person:

- \* Sales Manager Germany: Mr. Ansgar Pappenheim, e-mail: a.pappenheim@pergan.com
- \* Export Sales Manager: Mr. Dr. Thomas Philipps, e-mail: dr.philipps@pergan.com
- \* Environment protection / : Mr. Christoph Wilting, e-mail: c.wilting@pergan.com  
Security of labour

### 1.4 Emergency telephone number:

- Tel: +49 2871 9902-0

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

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

Self-react. D H242 Heating may cause a fire.  
Acute Tox. 4 H302 Harmful if swallowed.

### 2.2 Label elements

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

The substance is classified and labelled according to the CLP regulation.



GHS02 GHS07

#### Signal word

Danger

#### Hazard-determining components of labelling: Hazard statements

2,2'-azobis[2-methylbutyronitrile]  
H242 Heating may cause a fire.  
H302 Harmful if swallowed.

#### Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P220 Keep away from dirt, rust, chemicals in particular concentrated acids, alkalis and accelerators (e. g. heavy metal compounds and amines).  
P234 Keep only in original container.  
P264 Wash thoroughly after handling.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P370+P378 In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.  
P403+P235 Store in a well-ventilated place. Keep cool.  
P411 Store at temperatures not exceeding +25°C.  
P420 Do not mix with peroxide-accelerators or reducing agents.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

### 2.3 Other hazards

#### Results of PBT and vPvB assessment

- PBT: Not applicable.
- vPvB: Not applicable.

## SECTION 3: Composition/information on ingredients

### 3.1 Chemical characterisation: Substances

- CAS No. Description 13472-08-7 2,2'-azobis[2-methylbutyronitrile]

Trade name: **PEROXAN AIVN-PG**

(Contd. of page 1)

· Identification number(s)  
· EC number: 236-740-8

**SECTION 4: First aid measures****4.1 Description of first aid measures**

· **General information:** Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.



Take care of personal protection for the first aider.

· **After inhalation:** Take affected persons into fresh air and keep quiet.  
 · **After skin contact:** Immediately rinse with water. Immediately remove contaminated clothing.  
 · **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.  
 · **After swallowing:** Call for a doctor immediately.

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

No further relevant information available.

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

No further relevant information available.

**SECTION 5: Firefighting measures****5.1 Extinguishing media**

· **Suitable extinguishing agents:** CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

· **For safety reasons unsuitable extinguishing agents:** Water with full jet

**5.2 Special hazards arising from the substance or mixture**

During heating or in case of fire poisonous gases are produced. Under certain fire conditions, traces of other toxic gases cannot be excluded.

**5.3 Advice for firefighters**

· **Protective equipment:** Mouth respiratory protective device. Do not inhale explosion gases or combustion gases.

· **Additional information** Cool endangered receptacles with water spray. Self-protection first!

**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Mount respiratory protective device. After exceeding the emergency temperature must be diluted with a suitable desensitisation agent to < 10 %. In case of further temperature should be cooled with waterspray from a safe distance. Wear breathing apparatus with filter A during decomposition of materials. Wear protective equipment. Keep unprotected persons away.

**6.2 Environmental precautions:**

Do not allow to enter sewers/ surface or ground water.

**6.3 Methods and material for containment and cleaning up:**

Dispose contaminated material as waste according to item 13. Ensure adequate ventilation. Pick up mechanically, collect in a suitable receptacle and dispose in accordance with government regulations.

**6.4 Reference to other sections**

See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.  
In case of large spillage the environmental authority should be informed.

**SECTION 7: Handling and storage****7.1 Precautions for safe handling**

Keep receptacles tightly sealed. Keep away from heat and direct sunlight. Prevent formation of dust. Wear suitable respiratory protective device when decanting larger quantities without extractor facilities. Restrict the quantity stored at the work place.

(Contd. on page 3)

Trade name: **PEROXAN AIVN-PG**

(Contd. of page 2)

Before break and at the end of work hands should be thoroughly washed.  
Only use tools made of suitable materials (e. g. polyethylene or stainless steel).  
The product must be preserved, stored and transported continuously cool.  
Keep away from dirt, rust, chemicals in particular concentrated acids, alkalis and accelerators (e. g. heavy-metal compounds and amines).  
Avoid contact with skin and eyes.  
While using do not eat, drink or smoke.  
Do not generate flames or sparks.  
Keep product and emptied container away from heat and sources of ignition.  
Take precautionary measures against static discharges.



Do not smoke.

· **Information about fire - and explosion protection:**

Protect from heat.  
Protect against electrostatic charges.  
Keep respiratory protective device available.  
Use explosion-proof apparatus / fittings and spark-proof tools.  
Dust can combine with air to form an explosive mixture.  
Product is not explosive. However, formation of explosive air/dust mixtures are possible.



Avoid open flames, sparks, direct sunlight and other sources of ignition.

Keep ignition sources away - Do not smoke.

· **7.2 Conditions for safe storage, including any incompatibilities**

· **Storage:** Pay attention to the special requirements of your local authorities for storing dangerous goods.

· **Requirements to be met by storerooms and receptacles:**

Store in a cool location.  
Prevent any seepage into the ground.  
Use only receptacles specifically permitted for this substance/product.

· **Information about storage in one common storage facility:**

Store away from foodstuffs, drinks and feeding stuffs.

· **Further information about storage conditions:**

Keep container tightly sealed.  
Store in cool, dry conditions in well sealed receptacles.  
Protect from heat and direct sunlight.  
Protect from contamination.

· **Recommended storage temperature (To maintain quality):**

max.: +25°C

· **Control temperature:**

+35°C

· **Emergency temperature:**

+40°C

· **Storage class:**

4.1B

· **7.3 Specific end use(s)**

No further relevant information available.

## SECTION 8: Exposure controls/personal protection

· **Additional information about design of technical facilities:**

No further data; see item 7.

· **8.1 Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**

Not required.

· **DNELs**

**13472-08-7 2,2'-azobis[2-methylbutyronitrile]**

Dermal	DNEL Longterm System	970.87 mg/kg bw/day (Worker)
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Inhalative	DNEL Longterm System	0.705 mg/m3 (Worker)
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· **PNECs**

**13472-08-7 2,2'-azobis[2-methylbutyronitrile]**

PNEC Marinewater sed	0.084 mg/kg sed dw (-)
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PNEC Freshwater	0.052 mg/l (AF 50)
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PNEC Freshwater sed	0.84 mg/kg sed dw (-)
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PNEC Soil	0.14 mg/kg soil dw (-)
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PNEC STP	117 mg/l (AF 10)
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PNEC Marinewater	0.005 mg/l (AF 500)
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· **Additional information:**

The lists valid during the making were used as basis.

(Contd. on page 4)

Trade name: **PEROXAN AIVN-PG**

(Contd. of page 3)

· **8.2 Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

The usual precautionary measures are to be adhered to when handling chemicals.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Do not eat, drink, smoke or sniff while working.

Use skin protection cream for skin protection.

Be sure to clean skin thoroughly after work and before breaks.

· **Respiratory protection:**

Not necessary if room is well-ventilated.

Use suitable respiratory device when it exceed exposure limit and when insufficiently ventilated.



Filter P2

· **Protection of hands:**

Only use chemical-protective gloves with CE-labelling of category III.



Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Protective gloves

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Butyl rubber, BR

Fluorocarbon rubber (Viton)

Nitrile rubber, NBR

Neoprene

· **Penetration time of glove material**

The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

· **Body protection:**



Protective work clothing

**SECTION 9: Physical and chemical properties**

· **9.1 Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

· <b>Form:</b>	Solid
· <b>Colour:</b>	white - yellowish
· <b>Odour:</b>	Odourless
· <b>Odour threshold:</b>	Not determined.

· **pH-value:** Not applicable.

· **Change in condition**

· <b>Melting point/freezing point:</b>	Undetermined.
· <b>Initial boiling point and boiling range:</b>	Not applicable.

· **Flash point:** Not applicable.

· **Flammability (solid, gas):** Highly flammable.

· **Decomposition temperature:** +45 °C (SADT)

· **Auto-ignition temperature:** Not determined.

· **Explosive properties:** Product is not explosive. However, formation of explosive air/dust mixtures are possible.

· **Explosion limits:**

· <b>Lower:</b>	Not determined.
· <b>Upper:</b>	Not determined.

· **Vapour pressure:** Not applicable.

· **Density at 20 °C:** 1.11 g/cm<sup>3</sup>

· **Bulk density at 20 °C:** 500-600 kg/m<sup>3</sup>

· **Solubility in / Miscibility with water:**

Undetermined.

(Contd. on page 5)

Trade name: **PEROXAN AIVN-PG**

(Contd. of page 4)

- **Partition coefficient: n-octanol/water:** not determined
- **Viscosity:**
- **Dynamic:** Not applicable.
- **Kinematic:** Not applicable.
- **9.2 Other information** No further relevant information available.

### SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** SADT (Self Accelerating Decomposition Temperature) is the lowest temperature at which self accelerating decomposition may occur with substance in the packaging as used in transport. A dangerous self-accelerating decomposition reaction and, under certain circumstances, explosion or fire can be caused by decomposition at and above the temperature. Contact with incompatible substances can cause decomposition at or below the SADT.  
No decomposition if used and stored according to specifications.
- **10.3 Possibility of hazardous reactions** Self-accelerating decomposition at SADT.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** Danger of forming toxic pyrolysis products.
- **Additional information:** Emergency procedures will vary depending on conditions. The customer should have an emergency response plan in place.

### SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Harmful if swallowed.

- **LD/LC50 values relevant for classification:**

**13472-08-7 2,2'-azobis[2-methylbutyronitrile]**

Oral	LD50	337 mg/kg (rattus)
Dermal	LD50	>2,000 mg/kg (rattus)
Inhalative	LC50 / 4h	>8.9 mg/l (rattus)

- **Primary irritant effect:**
- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

### SECTION 12: Ecological information

- **12.1 Toxicity**

- **Aquatic toxicity:**

**13472-08-7 2,2'-azobis[2-methylbutyronitrile]**

EC50 / 72h	67 mg/l (alga)
LC50 / 48h	51.9 mg/l (daphnia magna)
EC50 / 96h	580 mg/l (brachydanio rerio)
NOEC fish	4.14 mg/l (-)
NOEC daphnia	2.58 mg/l (-)
NOEC algae	12.5 mg/l (-)

- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.

(Contd. on page 6)


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Trade name: **PEROXAN AIVN-PG**



(Contd. of page 5)

- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

**SECTION 13: Disposal considerations**

- **13.1 Waste treatment methods**
- **Recommendation**  Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Waste disposal key:** Please contact your hazardous waste disposers to assign the right EWC-(European waste catalog)-number.
- **Uncleaned packaging:**
- **Recommendation:** This material and its container must be disposed of as hazardous waste.

**SECTION 14: Transport information**

· <b>14.1 UN-Number</b> · <b>ADR, IMDG</b>	UN3236
· <b>14.2 UN proper shipping name</b> · <b>ADR</b>  · <b>IMDG</b>	UN3236 SELF-REACTIVE SOLID TYPE D, TEMPERATURE CONTROLLED (2,2'-AZODI(2-METHYLBUTYRONITRILE)) SELF-REACTIVE SOLID TYPE D, TEMPERATURE CONTROLLED (2,2'-AZODI(2-METHYLBUTYRONITRILE))
· <b>14.3 Transport hazard class(es)</b>  · <b>ADR</b>    · <b>Class</b>  · <b>Label</b>	4.1 (SR2) Flammable solids, self-reactive substances and solid desensitised explosives. 4.1
· <b>IMDG</b>    · <b>Class</b>  · <b>Label</b>	4.1 Flammable solids, self-reactive substances and solid desensitised explosives. 4.1
· <b>IATA</b> · <b>Class</b> · <b>Label</b>	X X
· <b>14.4 Packing group</b> · <b>ADR, IMDG</b>	Void
· <b>14.5 Environmental hazards:</b> · <b>Marine pollutant:</b>	No
· <b>14.6 Special precautions for user</b>  · <b>Stowage Category</b> · <b>Stowage Code</b>  · <b>Segregation Code</b>	Warning: Flammable solids, self-reactive substances and solid desensitised explosives. D SW1 Protected from sources of heat. SW3 Shall be transported under temperature control. SG35 Stow "separated from" SGG1-acids SG36 Stow "separated from" SGG18-alkalis.
· <b>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code</b>	Not applicable.

(Contd. on page 7)

Trade name: **PEROXAN AIVN-PG**

(Contd. of page 6)

· <b>Transport/Additional information:</b>	
· <b>ADR</b>	
· Limited quantities (LQ)	0
· Excepted quantities (EQ)	Code: E0 Not permitted as Excepted Quantity
· <b>Transport category</b>	1
· <b>Tunnel restriction code</b>	D
· <b>RID / GGVSEB:</b>	no admission
· <b>IMDG</b>	
· Limited quantities (LQ)	0
· Excepted quantities (EQ)	Code: E0 Not permitted as Excepted Quantity
· <b>IATA</b>	
· <b>Remarks:</b>	no admission
· <b>Control temperature:</b>	+35°C
· <b>Emergency temperature:</b>	+40°C

### SECTION 15: Regulatory information

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

- **Directive 2012/18/EU**
- **Named dangerous substances**
- **- ANNEX I** Substance is not listed.
- **Seveso category** P6b SELF-REACTIVE SUBSTANCES AND MIXTURES and ORGANIC PEROXIDES
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 50 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t
- **National regulations:**
- **Other regulations, limitations and prohibitive regulations**
- **Please note:** Take care of the respective local regulations.

### SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing SDS:** Environment protection / Security of labour
- **Contact:** Tel: +49 2871 9902-0  
E-mail: mail@pergan.com
- **Abbreviations and acronyms:** RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)  
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
DNEL: Derived No-Effect Level (REACH)  
PNEC: Predicted No-Effect Concentration (REACH)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
PBT: Persistent, Bioaccumulative and Toxic  
vPvB: very Persistent and very Bioaccumulative  
Self-react. D: Self-reactive substances and mixtures – Type C/D  
Acute Tox. 4: Acute toxicity – Category 4

- \* Data compared to the previous version altered.