

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

1.1 Product identifier

- **Trade name:** PEROXAN AZDN-C
- **CAS Number:** 78-67-1
- **EC number:** 201-132-3
- **Index number:** 608-019-00-1
- **Registration number:** 01-2119488882-21
- **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. C H242 Heating may cause a fire.
- Acute Tox. 4 H302 Harmful if swallowed.
- Acute Tox. 4 H332 Harmful if inhaled.
- Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

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

Hazard pictograms



GHS02 GHS07

Signal word

Danger

Hazard-determining components of labelling:

Hazard statements

2,2'-dimethyl-2,2'-azodipropionitrile
H242 Heating may cause a fire.
H302+H332 Harmful if swallowed or if inhaled.

Precautionary statements

- H412 Harmful to aquatic life with long lasting effects.
- 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.
- P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
- P264 Wash thoroughly after handling.
- P273 Avoid release to the environment.
- P370+P378 In case of fire: Use for extinction: CO₂, powder or water spray.
- P411+P235 Store at temperatures not exceeding +40°C. Keep cool.
- P420 Store away from other materials.
- 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.

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SECTION 3: Composition/information on ingredients**3.1 Chemical characterisation: Substances**

| | |
|----------------------------|-----------------------------------------------|
| · CAS No. Description | 78-67-1 2,2'-dimethyl-2,2'-azodipropionitrile |
| · Identification number(s) | |
| · EC number: | 201-132-3 |
| · Index number: | 608-019-00-1 |

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:

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

In case of unconsciousness place patient stably in side position for transportation.

Take affected persons into fresh air and keep quiet.

After skin contact:

Immediately remove contaminated clothing.

After eye contact:

Rinse opened eye for several minutes under running water.

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:** CO₂, 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

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**

Remove persons from danger area.

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:

Inform respective authorities in case of seepage into water course or sewage system.



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.

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SECTION 7: Handling and storage

7.1 Precautions for safe handling

Thorough dedusting.
Keep away from heat and direct sunlight.
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of dust.
Wear suitable respiratory protective device when decanting larger quantities without extractor facilities.
Handle with care. Avoid jolting, friction and impact.
Restrict the quantity stored at the work place.
Use only in well ventilated areas.
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).
Keep away from dirt, rust, chemicals in particular concentrated acids, alkalis and accelerators (e. g. heavy-metal compounds and amines).
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.
Avoid shock and friction.
Take precautionary measures against static discharges.



Do not smoke.

Information about fire - and explosion protection:

Protect from heat.
Protect against electrostatic charges.
Prevent impact and friction.
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.
Store under lock and key and with access restricted to technical experts or their assistants only.
Storage in a collecting room is required.

Recommended storage temperature (To maintain quality):

max.: +25 °C

Control temperature:

+40 °C

Emergency temperature:

+45 °C

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

78-67-1 2,2'-dimethyl-2,2'-azodipropionitrile

| | | |
|--------|----------------------|------------------------------|
| Dermal | DNEL Longterm System | 194.17 mg/kg bw/day (Worker) |
|--------|----------------------|------------------------------|

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| | | |
|------------|----------------------|---------------------------------|
| Inhalative | DNEL Acute Local | 199 mg/m ³ (Worker) |
| | DNEL Longterm System | 0.14 mg/m ³ (Worker) |

· PNECs

78-67-1 2,2'-dimethyl-2,2'-azodipropionitrile

| | |
|----------------------|---------------------|
| PNEC Marinewater sed | 0.091 mg/kg sed dw |
| PNEC Freshwater | 0.15 mg/l (AF 10) |
| PNEC Freshwater sed | 0.912 mg/kg sed dw |
| PNEC Soil | 0.094 mg/kg soil dw |
| PNEC STP | 100 mg/l (AF 10) |
| PNEC Marinewater | 0.015 mg/l (AF 100) |

· **Additional information:** The lists valid during the making were used as basis.

· 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:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
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:

| | |
|--------------------|----------------------|
| · Form: | Solid Crystalline |
| · Colour: | Not determined. |
| · Odour: | Characteristic |
| · Odour threshold: | Not determined. |

· pH-value: Not applicable.

· Change in condition

| | |
|--------------------------------------------|-----------------|
| · Melting point/freezing point: | Not applicable. |
| · Initial boiling point and boiling range: | Not applicable. |

· Flash point: Not applicable.

· Flammability (solid, gas): Highly flammable.

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| | |
|--------------------------------------------------|--------------------------------------------------------------------------|
| · Decomposition temperature: | +50 °C (SADT) |
| · Auto-ignition temperature: | Not determined. |
| · Explosive properties: | Risk of explosion by shock, friction, fire or other sources of ignition. |
| · Explosion limits: | |
| · Lower: | Not determined. |
| · Upper: | Not determined. |
| · Vapour pressure: | Not applicable. |
| · Density: | Not determined. |
| · Bulk density at 20 °C: | 500 - 700 kg/m ³ |
| · Relative density | Not determined. |
| · Vapour density | Not applicable. |
| · Evaporation rate | Not applicable. |
| · Solubility in / Miscibility with water: | Undetermined. |
| · 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: | 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: | Rapid decomposition by dirt, rust, chemicals in particular concentrated acids, alkalis and accelerators (e. g. heavy-metal compounds and amines). |
| · 10.6 Hazardous decomposition products: | Danger of forming toxic pyrolysis products. Hydrocarbons, carbon dioxide and -monoxide. No hazardous decomposition products if used and stored according to specifications. |
| · Major decomposition products: | nitrogen Tetramethyl succinonitrile 2-Methylpropanitrile Methacrylonitrile Isobutyronitrile |
| · 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 or if inhaled. |

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

78-67-1 2,2'-dimethyl-2,2'-azodipropionitrile

Oral LD50 300-2,000 mg/kg (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. |

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· **Aspiration hazard** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

· 12.1 Toxicity

· Aquatic toxicity:

78-67-1 2,2'-dimethyl-2,2'-azodipropionitrile

| | |
|------------|--------------------------|
| EC50 / 72h | 4.5 mg/l (alga) |
| LC50 / 96h | 100 mg/l (piscis) |
| EC50 / 48h | 367 mg/l (daphnia magna) |

· 12.2 Persistence and degradability

No further relevant information available.

· 12.3 Bioaccumulative potential

No further relevant information available.

· 12.4 Mobility in soil

No further relevant information available.

· Ecotoxicological effects:

· Remark:

Harmful to fish

· Additional ecological information:

· General notes:

Harmful to aquatic organisms

Water hazard class 2 (German Regulation) (Assessment by list): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

· 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

· 14.1 UN-Number

· ADR, IMDG

UN3234

· 14.2 UN proper shipping name

· ADR

UN3234 SELF-REACTIVE SOLID TYPE C,
TEMPERATURE CONTROLLED (2,2'-AZODI(I)SOBUTYRONITRILE))
SELF-REACTIVE SOLID TYPE C,
TEMPERATURE CONTROLLED (2,2'-AZODI(I)SOBUTYRONITRILE))

· IMDG

· 14.3 Transport hazard class(es)

· ADR



· Class

4.1 (SR2) Flammable solids, self-reactive substances and solid desensitised explosives.

· Label

4.1

· IMDG



· Class

4.1 Flammable solids, self-reactive substances and solid desensitised explosives.

· Label

4.1

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| | |
|--------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| · IATA · Class · Label | X X |
| · 14.4 Packing group · ADR, IMDG | Void |
| · 14.5 Environmental hazards: · Marine pollutant: | No |
| · 14.6 Special precautions for user · Danger code (Kemler): · Stowage Category · Stowage Code · Segregation Code | 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. |
| · 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code | Not applicable. |
| · Transport/Additional information: | |
| · ADR · Limited quantities (LQ) · Excepted quantities (EQ) | 0 Code: E0 Not permitted as Excepted Quantity |
| · Transport category · Tunnel restriction code | 1 D |
| · RID / GGVSEB: | no admission |
| · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) | 0 Code: E0 Not permitted as Excepted Quantity |
| · IATA · Remarks: | no admission |
| · Control temperature: · Emergency temperature: | +40 °C +45 °C |

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- Directive 2012/18/EU
- 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)

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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. C: Self-reactive substances and mixtures – Type C/D
Acute Tox. 4: Acute toxicity – Category 4
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

· * Data compared to the
previous version altered.