

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758



Vazo™ 52

Version	Revision Date:	SDS Number:	Date of last issue: 10.05.2024
5.3	16.10.2024	9401791-00010	Date of first issue: 27.08.2021

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

1.1 Product identifier

Trade name	:	Vazo™ 52
SDS-Identcode	:	130000000404
Substance name	:	2,2'-Azodi[2,4-Dimethylvaleronitrile]
EC-No.	:	224-583-8

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

Use of the Sub- stance/Mixture	:	Intermediate
Recommended restrictions on use	:	For industrial use only.

1.3 Details of the supplier of the safety data sheet

Company	:	Chemours Netherlands B.V. Baanhoekweg 22 3313 LA Dordrecht Netherlands
Telephone	:	+31-(0)-78-630-1011
Telefax	:	+31-78-6163737
E-mail address of person responsible for the SDS	:	sds-support@chemours.com

1.4 Emergency telephone number

+(44)-870-8200418 (CHEMTREC - Recommended)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

**Classification (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK
SI 2019/720, and UK SI 2020/1567)**

Self-reactive substances and mixtures, Type D	H242: Heating may cause a fire.
Skin sensitisation, Sub-category 1A	H317: May cause an allergic skin reaction.
Long-term (chronic) aquatic hazard, Cat-	H411: Toxic to aquatic life with long lasting effects.

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Category 2

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

Hazard pictograms	:	  
Signal word	:	Danger
Hazard statements	:	H242 Heating may cause a fire. H317 May cause an allergic skin reaction. H411 Toxic to aquatic life with long lasting effects.
Precautionary statements	:	Prevention: P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P235 Keep cool. P273 Avoid release to the environment. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. Response: P391 Collect spillage. Storage: P411 Store at temperatures not exceeding 10 °C/ 50 °F.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Risk of explosion if heated under confinement.

Dust contact with the eyes can lead to mechanical irritation.

Contact with dust can cause mechanical irritation or drying of the skin.

May form explosive dust-air mixture.

SECTION 3: Composition/information on ingredients

3.1 Substances

Substance name : 2,2'-Azodi[2,4-Dimethylvaleronitrile]

EC-No. : 224-583-8

Components

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Chemical name	CAS-No. EC-No.	Concentration (% w/w)
2,2'-Azodi[2,4-Dimethylvaleronitrile]	4419-11-8 224-583-8	$\geq 90 - \leq 100$
2-[2-(1-cyano-1-methylethyl)diazenyl]-2-(2,4-dimethylvaleronitrile)	Not Assigned	$\geq 0.25 - < 1$
2-[2-(1-cyano-3-methylbutyl)diazenyl]-2-(2,4-dimethylvaleronitrile)	Not Assigned	$\geq 0.025 - < 0.1$

SECTION 4: First aid measures

4.1 Description of first aid measures

- General advice : In the case of accident or if you feel unwell, seek medical advice immediately.
When symptoms persist or in all cases of doubt seek medical advice.
- Protection of first-aiders : First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8).
- If inhaled : If inhaled, remove to fresh air.
Get medical attention if symptoms occur.
- In case of skin contact : In case of contact, immediately flush skin with soap and plenty of water.
Remove contaminated clothing and shoes.
Get medical attention.
Wash clothing before reuse.
Thoroughly clean shoes before reuse.
- In case of eye contact : If in eyes, rinse well with water.
Get medical attention if irritation develops and persists.
- If swallowed : If swallowed, DO NOT induce vomiting.
Get medical attention if symptoms occur.
Rinse mouth thoroughly with water.

4.2 Most important symptoms and effects, both acute and delayed

- Symptoms : Skin contact may provoke the following symptoms:
Discomfort
Itching
Redness
Swelling of tissue
- Eye contact may provoke the following symptoms
Irritation
tearing

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Redness
Discomfort

Ingestion may provoke the following symptoms:
Gastrointestinal disturbance

Risks : May cause an allergic skin reaction.

Contact with dust can cause mechanical irritation or drying of
the skin.

Dust contact with the eyes can lead to mechanical irritation.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically and supportively.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Water spray
Alcohol-resistant foam

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

Do not use a solid water stream as it may scatter and spread fire.

The product burns violently.

Exposure to combustion products may be a hazard to health.

Hazardous combustion products : Nitrogen oxides (NO_x)
Carbon oxides

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment.

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Use water spray to cool unopened containers.
Remove undamaged containers from fire area if it is safe to do so.
Evacuate area.

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SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Remove all sources of ignition.
Use personal protective equipment.
Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).

6.2 Environmental precautions

Environmental precautions : Avoid release to the environment.
Prevent further leakage or spillage if safe to do so.
Retain and dispose of contaminated wash water.
If spillage enters rivers or watercourses, inform the Environment Agency (emergency telephone number 0800 807060).

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Clear spills immediately.
Take any precaution to avoid mixing with combustibles.
Soak up with inert absorbent material.
Remove mechanically and with care (e.g. with clean polyethylene plastic shovel).
Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).
Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration.
Isolate waste and do not reuse.
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Technical measures : Static electricity may accumulate and ignite suspended dust causing an explosion.
Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres.

Local/Total ventilation : Use only with adequate ventilation.
If advised by assessment of the local exposure potential, use only in an area equipped with explosion-proof exhaust ventilation.

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Advice on safe handling : Do not get on skin or clothing.
Avoid breathing dust, fume, gas, mist, vapours or spray.
Do not swallow.
Avoid contact with eyes.
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment
Non-sparking tools should be used.
Prevent pressure build-up
Protect from contamination.
Minimize dust generation and accumulation.
Keep container closed when not in use.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep away from clothing and other combustible materials.
Take precautionary measures against static discharges.
Keep only in original packaging.
Take care to prevent spills, waste and minimize release to the environment.

Do not breathe decomposition products.

Hygiene measures : If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Contaminated work clothing should not be allowed out of the workplace.
Wash contaminated clothing before re-use.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep in properly labelled containers. Keep in a dry, cool and well-ventilated place. Protect from sunlight. Adhere to recommended storage temperature. Store in accordance with the particular national regulations. Keep away from heat and sources of ignition.

Store in original container.

Advice on common storage : Store away from other materials.

Recommended storage temperature : < 10 °C

7.3 Specific end use(s)

Specific use(s) : No data available

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SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
2,2'-Azodi[2,4-Dimethylvaleronitrile]	4419-11-8	TWA	5 mg/m ³ (Cyanide)	GB EH40
	Further information: Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.			
2-[2-(1-cyano-1-methylethyl)diazenyl]-2-(2,4-dimethylvaleronitrile)	Not Assigned	TWA	5 mg/m ³ (Cyanide)	GB EH40
	Further information: Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.			
2-[2-(1-cyano-3-methylbutyl)diazenyl]-2-(2,4-dimethylvaleronitrile)	Not Assigned	TWA	5 mg/m ³ (Cyanide)	GB EH40
	Further information: Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.			

Occupational exposure limits of decomposition products

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Hydrogen cyanide	74-90-8	TWA	0.9 ppm 1 mg/m ³	GB EH40
	Further information: Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.			
		STEL	4.5 ppm 5 mg/m ³	GB EH40
	Further information: Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.			
		STEL	4.5 ppm 5 mg/m ³ (Cyanide)	2017/164/EU
	Further information: Identifies the possibility of significant uptake through the skin, Indicative			

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		TWA	0.9 ppm 1 mg/m ³ (Cyanide)	2017/164/EU
	Further information: Identifies the possibility of significant uptake through the skin, Indicative			
Carbon monoxide	630-08-0	TWA	30 ppm 35 mg/m ³	GB EH40
		STEL	200 ppm 232 mg/m ³	GB EH40
		TWA	20 ppm 23 mg/m ³	GB EH40
		STEL	100 ppm 117 mg/m ³	GB EH40
		STEL	100 ppm 117 mg/m ³	2017/164/EU
	Further information: Indicative			
		TWA	20 ppm 23 mg/m ³	2017/164/EU
	Further information: Indicative			
		TWA	20 ppm 23 mg/m ³	2004/37/EC
	Further information: Carcinogens or mutagens			
		STEL	100 ppm 117 mg/m ³	2004/37/EC
	Further information: Carcinogens or mutagens			
Carbon dioxide	124-38-9	TWA	5,000 ppm 9,150 mg/m ³	GB EH40
		STEL	15,000 ppm 27,400 mg/m ³	GB EH40
		TWA	5,000 ppm 9,000 mg/m ³	2006/15/EC
	Further information: Indicative			

8.2 Exposure controls

Engineering measures

Processing may form hazardous compounds (see section 10).
Ensure adequate ventilation, especially in confined areas.
Minimize workplace exposure concentrations.
Apply measures to prevent dust explosions.
Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment).
If advised by assessment of the local exposure potential, use only in an area equipped with explosion-proof exhaust ventilation.

Personal protective equipment

Eye/face protection : Wear the following personal protective equipment:
Safety goggles
Equipment should conform to BS EN 166

Hand protection

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Material	:	Chemical-resistant gloves
Remarks	:	Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday.
Skin and body protection	:	Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential. Wear the following personal protective equipment: If assessment demonstrates that there is a risk of explosive atmospheres or flash fires, use flame retardant antistatic protective clothing. Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).
Respiratory protection	:	If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection. Equipment should conform to BS EN 137
Filter type	:	Self-contained breathing apparatus

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	solid
Colour	:	white
Odour	:	odourless
Odour Threshold	:	No data available
pH	:	7
Melting point/freezing point	:	> 50 °C Do not attempt to verify melting point; decomposition can be violent.
Initial boiling point and boiling range	:	No data available
Flash point	:	Not applicable
Evaporation rate	:	0

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(Butyl Acetate=1.0)

Flammability (solid, gas)	:	May form explosive dust-air mixture.
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	0.03 %(V)
Vapour pressure	:	Not applicable
Relative vapour density	:	Not applicable
Relative density	:	0.969
Bulk density	:	400 kg/m ³
Solubility(ies) Water solubility	:	>= 0.00937 g/l (20 °C)
Partition coefficient: n-octanol/water	:	log Pow: 3.319 (20 °C)
Auto-ignition temperature	:	225 °C
Decomposition temperature	:	The product is a self-reactive substance or mixture classified as type D.
Viscosity Viscosity, kinematic	:	Not applicable
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.

9.2 Other information

Self-Accelerating decomposition temperature (SADT)	:	25 °C
Particle size	:	No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Heating may cause a fire.

10.2 Chemical stability

Follow precautionary advice and avoid incompatible materials and conditions

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10.3 Possibility of hazardous reactions

Hazardous reactions : May form explosive dust-air mixture.
Oxidizing material can cause a reaction.
Hazardous decomposition products will be formed at elevated temperatures.
May explode under confinement.

10.4 Conditions to avoid

Conditions to avoid : Heat, flames and sparks.
Protect from contamination.
Avoid dust formation.
Temperatures greater than recommended storage temperature.
Contact with incompatible substances can cause decomposition at or below SADT.

10.5 Incompatible materials

Materials to avoid : Oxidizing agents
Avoid impurities (e.g. rust, dust, ash), risk of decomposition.
Flammable materials

10.6 Hazardous decomposition products

Thermal decomposition : Hydrogen cyanide
Nitrogen
Carbon monoxide
Carbon dioxide

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Information on likely routes of exposure : Inhalation
Skin contact
Ingestion
Eye contact

Acute toxicity

Not classified based on available information.

Components:

2,2'-Azodi[2,4-Dimethylvaleronitrile]:

Acute oral toxicity : LD50 (Mouse): > 6,000 mg/kg
Method: Expert judgement

Acute inhalation toxicity : Approximate Lethal Concentration (Rat): 9.3 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: The substance or mixture has no acute inhala-

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tion toxicity

2-[2-(1-cyano-1-methylethyl)diazenyl]-2-(2,4-dimethylvaleronitrile):

Acute oral toxicity : LD50 (Mouse): > 6,000 mg/kg
Method: Expert judgement
Remarks: Based on data from similar materials

Acute inhalation toxicity : Approximate Lethal Concentration (Rat): 9.3 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: The substance or mixture has no acute inhalation toxicity

2-[2-(1-cyano-3-methylbutyl)diazenyl]-2-(2,4-dimethylvaleronitrile):

Acute oral toxicity : LD50 (Mouse): > 6,000 mg/kg
Method: Expert judgement
Remarks: Based on data from similar materials

Acute inhalation toxicity : Approximate Lethal Concentration (Rat): 9.3 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: The substance or mixture has no acute inhalation toxicity

Skin corrosion/irritation

Not classified based on available information.

Components:

2,2'-Azodi[2,4-Dimethylvaleronitrile]:

Species : Tissue Culture
Method : OECD Test Guideline 439
Result : No skin irritation

2-[2-(1-cyano-1-methylethyl)diazenyl]-2-(2,4-dimethylvaleronitrile):

Species : Tissue Culture
Method : OECD Test Guideline 439
Result : No skin irritation
Remarks : Based on data from similar materials

2-[2-(1-cyano-3-methylbutyl)diazenyl]-2-(2,4-dimethylvaleronitrile):

Species : Tissue Culture
Method : OECD Test Guideline 439
Result : No skin irritation
Remarks : Based on data from similar materials

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Serious eye damage/eye irritation

Not classified based on available information.

Components:

2,2'-Azodi[2,4-Dimethylvaleronitrile]:

Species	:	Bovine cornea
Method	:	OECD Test Guideline 437
Result	:	No eye irritation

Species	:	Not tested on animals
Method	:	OECD Test Guideline 492
Result	:	No eye irritation

2-[2-(1-cyano-1-methylethyl)diazenyl]-2-(2,4-dimethylvaleronitrile):

Species	:	Bovine cornea
Method	:	OECD Test Guideline 437
Result	:	No eye irritation
Remarks	:	Based on data from similar materials

Species	:	Not tested on animals
Method	:	OECD Test Guideline 492
Result	:	No eye irritation
Remarks	:	Based on data from similar materials

2-[2-(1-cyano-3-methylbutyl)diazenyl]-2-(2,4-dimethylvaleronitrile):

Species	:	Bovine cornea
Method	:	OECD Test Guideline 437
Result	:	No eye irritation
Remarks	:	Based on data from similar materials

Species	:	Not tested on animals
Method	:	OECD Test Guideline 492
Result	:	No eye irritation
Remarks	:	Based on data from similar materials

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

Not classified based on available information.

Product:

Assessment	:	Probability or evidence of high skin sensitisation rate in humans
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Components:

2,2'-Azodi[2,4-Dimethylvaleronitrile]:

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Test Type : Direct Peptide Reactivity Assay (DPRA)
Exposure routes : Skin contact
Species : Not tested on animals
Method : OECD Test Guideline 442C
Result : positive

Test Type : KeratinoSens assay
Exposure routes : Skin contact
Species : Tissue Culture
Method : OECD Test Guideline 442D
Result : positive

Assessment : Probability or evidence of high skin sensitisation rate in humans

2-[2-(1-cyano-1-methylethyl)diazenyl]-2-(2,4-dimethylvaleronitrile):

Test Type : Direct Peptide Reactivity Assay (DPRA)
Exposure routes : Skin contact
Species : Not tested on animals
Method : OECD Test Guideline 442C
Result : positive
Remarks : Based on data from similar materials

Test Type : KeratinoSens assay
Exposure routes : Skin contact
Species : Tissue Culture
Method : OECD Test Guideline 442D
Result : positive
Remarks : Based on data from similar materials

Assessment : Probability or evidence of high skin sensitisation rate in humans

2-[2-(1-cyano-3-methylbutyl)diazenyl]-2-(2,4-dimethylvaleronitrile):

Test Type : Direct Peptide Reactivity Assay (DPRA)
Exposure routes : Skin contact
Species : Not tested on animals
Method : OECD Test Guideline 442C
Result : positive
Remarks : Based on data from similar materials

Test Type : KeratinoSens assay
Exposure routes : Skin contact
Species : Tissue Culture
Method : OECD Test Guideline 442D
Result : positive
Remarks : Based on data from similar materials

Assessment : Probability or evidence of high skin sensitisation rate in humans

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Germ cell mutagenicity

Not classified based on available information.

Components:

2,2'-Azodi[2,4-Dimethylvaleronitrile]:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative

Test Type: in vitro micronucleus test
Method: OECD Test Guideline 487
Result: negative

Germ cell mutagenicity- Assessment : Weight of evidence does not support classification as a germ cell mutagen.

2-[2-(1-cyano-1-methylethyl)diazenyl]-2-(2,4-dimethylvaleronitrile):

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative
Remarks: Based on data from similar materials

Test Type: in vitro micronucleus test
Method: OECD Test Guideline 487
Result: negative
Remarks: Based on data from similar materials

Germ cell mutagenicity- Assessment : Weight of evidence does not support classification as a germ cell mutagen.

2-[2-(1-cyano-3-methylbutyl)diazenyl]-2-(2,4-dimethylvaleronitrile):

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative
Remarks: Based on data from similar materials

Test Type: in vitro micronucleus test
Method: OECD Test Guideline 487
Result: negative
Remarks: Based on data from similar materials

Germ cell mutagenicity- Assessment : Weight of evidence does not support classification as a germ cell mutagen.

Carcinogenicity

Not classified based on available information.

Reproductive toxicity

Not classified based on available information.

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Components:

2,2'-Azodi[2,4-Dimethylvaleronitrile]:

Effects on fertility : Test Type: Reproduction/Developmental toxicity screening test
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 422
Result: negative

Effects on foetal development : Test Type: Reproduction/Developmental toxicity screening test
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 422
Result: negative

Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity

2-[2-(1-cyano-1-methylethyl)diazenyl]-2-(2,4-dimethylvaleronitrile):

Effects on fertility : Test Type: Reproduction/Developmental toxicity screening test
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 422
Result: negative
Remarks: Based on data from similar materials

Effects on foetal development : Test Type: Reproduction/Developmental toxicity screening test
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 422
Result: negative
Remarks: Based on data from similar materials

Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity

2-[2-(1-cyano-3-methylbutyl)diazenyl]-2-(2,4-dimethylvaleronitrile):

Effects on fertility : Test Type: Reproduction/Developmental toxicity screening test
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 422
Result: negative
Remarks: Based on data from similar materials

Effects on foetal development : Test Type: Reproduction/Developmental toxicity screening test
Species: Rat

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Application Route: Ingestion
Method: OECD Test Guideline 422
Result: negative
Remarks: Based on data from similar materials

Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Components:

2,2'-Azodi[2,4-Dimethylvaleronitrile]:

Exposure routes : Ingestion
Assessment : No significant health effects observed in animals at concentrations of 100 mg/kg bw or less.

2-[2-(1-cyano-1-methylethyl)diazenyl]-2-(2,4-dimethylvaleronitrile):

Exposure routes : Ingestion
Assessment : No significant health effects observed in animals at concentrations of 100 mg/kg bw or less.

2-[2-(1-cyano-3-methylbutyl)diazenyl]-2-(2,4-dimethylvaleronitrile):

Exposure routes : Ingestion
Assessment : No significant health effects observed in animals at concentrations of 100 mg/kg bw or less.

Repeated dose toxicity

Components:

2,2'-Azodi[2,4-Dimethylvaleronitrile]:

Species : Rat, male and female
NOAEL : 250 mg/kg
LOAEL : > 250 mg/kg
Application Route : Ingestion
Exposure time : 8 Weeks
Method : OECD Test Guideline 422

2-[2-(1-cyano-1-methylethyl)diazenyl]-2-(2,4-dimethylvaleronitrile):

Species : Rat, male and female
NOAEL : 250 mg/kg
LOAEL : > 250 mg/kg
Application Route : Ingestion
Exposure time : 8 Weeks
Method : OECD Test Guideline 422

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Remarks : Based on data from similar materials

2-[2-(1-cyano-3-methylbutyl)diazenyl]-2-(2,4-dimethylvaleronitrile):

Species : Rat, male and female
NOAEL : 250 mg/kg
LOAEL : > 250 mg/kg
Application Route : Ingestion
Exposure time : 8 Weeks
Method : OECD Test Guideline 422
Remarks : Based on data from similar materials

Aspiration toxicity

Not classified based on available information.

Components:

2,2'-Azodi[2,4-Dimethylvaleronitrile]:

No aspiration toxicity classification

2-[2-(1-cyano-1-methylethyl)diazenyl]-2-(2,4-dimethylvaleronitrile):

No aspiration toxicity classification

2-[2-(1-cyano-3-methylbutyl)diazenyl]-2-(2,4-dimethylvaleronitrile):

No aspiration toxicity classification

SECTION 12: Ecological information

12.1 Toxicity

Components:

2,2'-Azodi[2,4-Dimethylvaleronitrile]:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 2.11 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 1.17 mg/l
aquatic invertebrates : Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae/aquatic : EC50 (Desmodesmus subspicatus (green algae)): 1.48 mg/l
plants : Exposure time: 72 h
Method: OECD Test Guideline 201

NOEC (Desmodesmus subspicatus (green algae)): 1.19 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

2-[2-(1-cyano-1-methylethyl)diazenyl]-2-(2,4-dimethylvaleronitrile):

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Toxicity to fish : LC50 (Danio rerio (zebra fish)): 2.11 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1.17 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): 1.48 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

NOEC (Desmodesmus subspicatus (green algae)): 1.19 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

2-[2-(1-cyano-3-methylbutyl)diazenyl]-2-(2,4-dimethylvaleronitrile):

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 2.11 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1.17 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): 1.48 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

NOEC (Desmodesmus subspicatus (green algae)): 1.19 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

12.2 Persistence and degradability

Components:

2,2'-Azodi[2,4-Dimethylvaleronitrile]:

Biodegradability : Result: Not readily biodegradable.
Method: OECD Test Guideline 301B

2-[2-(1-cyano-1-methylethyl)diazenyl]-2-(2,4-dimethylvaleronitrile):

Biodegradability : Result: Not readily biodegradable.

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Method: OECD Test Guideline 301B
Remarks: Based on data from similar materials

2-[2-(1-cyano-3-methylbutyl)diazenyl]-2-(2,4-dimethylvaleronitrile):

Biodegradability : Result: Not readily biodegradable.
Method: OECD Test Guideline 301B
Remarks: Based on data from similar materials

12.3 Bioaccumulative potential

Components:

2,2'-Azodi[2,4-Dimethylvaleronitrile]:

Partition coefficient: n-octanol/water : log Pow: 3.319 (25 °C)

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

Product:

Endocrine disrupting potential : This substance/mixture does not contain components considered to have endocrine disrupting properties for environment according to UK REACH Article 57(f).

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Dispose of in accordance with local regulations.
According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.
Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.
Do not dispose of waste into sewer.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.
If not otherwise specified: Dispose of as unused product.

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SECTION 14: Transport information

14.1 UN number

ADN : UN 3236
ADR : UN 3236
RID : UN 3236
Not permitted for transport
IMDG : UN 3236
IATA : UN 3236
Not permitted for transport

14.2 UN proper shipping name

ADN : SELF-REACTIVE SOLID TYPE D, TEMPERATURE CONTROLLED (2,2'-AZODI(2,4-DIMETHYLVALERONITRILE))
ADR : SELF-REACTIVE SOLID TYPE D, TEMPERATURE CONTROLLED (2,2'-AZODI(2,4-DIMETHYLVALERONITRILE))
RID : SELF-REACTIVE SOLID TYPE D, TEMPERATURE CONTROLLED (2,2'-AZODI(2,4-DIMETHYLVALERONITRILE))
Not permitted for transport
IMDG : SELF-REACTIVE SOLID TYPE D, TEMPERATURE CONTROLLED (2,2'-AZODI(2,4-DIMETHYLVALERONITRILE))
(2,2'-Azodi[2,4-Dimethylvaleronitrile])
IATA : SELF-REACTIVE SOLID TYPE D, TEMPERATURE CONTROLLED (2,2'-AZODI (2,4-DIMETHYL-VALERONITRILE))
Not permitted for transport

14.3 Transport hazard class(es)

	Class	Subsidiary risks
ADN	: 4.1	
ADR	: 4.1	
RID	: Not permitted for transport	
IMDG	: 4.1	
IATA	: Not permitted for transport	

14.4 Packing group

ADN
Packing group : Not assigned by regulation
Classification Code : SR2
Labels : 4.1

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ADR

Packing group : Not assigned by regulation
Classification Code : SR2
Labels : 4.1
Tunnel restriction code : (D)

RID : Not permitted for transport

IMDG

Packing group : Not assigned by regulation
Labels : 4.1
EmS Code : F-F, S-K

IATA (Cargo) : Not permitted for transport

IATA (Passenger) : Not permitted for transport

14.5 Environmental hazards

ADN

Environmentally hazardous : yes

ADR

Environmentally hazardous : yes

RID

: Not permitted for transport

IMDG

Marine pollutant : yes

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Remarks : Not applicable for product as supplied.

SECTION 15: Regulatory information

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

Relevant EU provisions transposed through retained EU law

UK REACH List of restrictions (Annex 17) : Not applicable

UK REACH Candidate list of substances of very high concern (SVHC) for Authorisation : Not applicable

The Persistent Organic Pollutants Regulations (retained Regulation (EU) 2019/1021 as amended for Great Britain) : Not applicable

Regulation (EC) on substances that deplete the ozone layer : Not applicable

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UK REACH List of substances subject to authorisation (Annex XIV) : Not applicable

GB Export and import of hazardous chemicals - Prior Informed Consent (PIC) Regulation : Not applicable

Control of Major Accident Hazards Regulations 2015 (COMAH)

		Quantity 1	Quantity 2
P6b	SELF-REACTIVE SUBSTANCES AND MIXTURES and ORGANIC PEROXIDES	50 t	200 t
E2	ENVIRONMENTAL HAZARDS	200 t	500 t

Other regulations:

Take note of The Management of Health and Safety at Work Regulations 1999 (requirements relating to new and expectant mothers at work contained in Regulation 16 to 18) and of the Pregnant Workers Directive 92/85/EEC.

Take note of The Management of Health and Safety at Work Regulations 1999 (requirements relating to protection of young people at work contained in Regulation 19) and of Directive 94/33/EC on the protection of young people at work.

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Other information : Vazo™ and any associated logos are trademarks or copyrights of The Chemours Company FC, LLC. Chemours™ and the Chemours Logo are trademarks of The Chemours Company. Before use read Chemours safety information. For further information contact the local Chemours office or nominated distributors.

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

Full text of other abbreviations

2004/37/EC	: Europe. Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work
2006/15/EC	: Europe. Indicative occupational exposure limit values
2017/164/EU	: Europe. Commission Directive 2017/164/EU establishing a

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fourth list of indicative occupational exposure limit values

GB EH40	:	UK. EH40 WEL - Workplace Exposure Limits
2004/37/EC / STEL	:	Short term exposure limit
2004/37/EC / TWA	:	Long term exposure limit
2006/15/EC / TWA	:	Limit Value - eight hours
2017/164/EU / STEL	:	Short term exposure limit
2017/164/EU / TWA	:	Limit Value - eight hours
GB EH40 / TWA	:	Long-term exposure limit (8-hour TWA reference period)
GB EH40 / STEL	:	Short-term exposure limit (15-minute reference period)

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Further information

Sources of key data used to compile the Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only

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to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

GB / EN