

Safety Data Sheet

acc. to OSHA HCS

Revision date 08/23/2024

1 Identification

- **Product identifier**
- **Product Name:** Non-Halogenated Volatiles Standard (1X1 mL)
- **Part number:** NVM-8015A-1
- **Application of the substance / the mixture** Reagents and Standards for Analytical Chemical Laboratory Use
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Agilent Technologies, Inc.
5301 Stevens Creek Blvd.
Santa Clara, CA 95051 USA
- **Information department:**
Telephone: 800-227-9770
e-mail: pdl-msds_author@agilent.com
- **Emergency telephone number:** CHEMTREC®: 1-800-424-9300

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS08 Health hazard

Carcinogenicity 1A H350 May cause cancer.

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS08

- **Signal word** Danger
- **Hazard-determining components of labeling:**
ethanol
4-methylpentan-2-one
1,4-dioxane
- **Hazard statements**
H350 May cause cancer.
- **Precautionary statements**
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



- **HMIS-ratings (scale 0 - 4)**



- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

· Dangerous components:

60-29-7	diethyl ether	0.2%
64-17-5	ethanol	0.2%
67-56-1	methanol	0.2%
107-12-0	propionitrile	0.2%
107-18-6	allyl alcohol	0.2%
108-10-1	4-methylpentan-2-one	0.2%
123-91-1	1,4-dioxane	0.2%

4 First-aid measures

- **Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** If symptoms persist consult doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture** No further relevant information available.

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- **Advice for firefighters**
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.
- **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.
- **Protective Action Criteria for Chemicals**

· PAC-1:

60-29-7	diethyl ether	500 ppm
64-17-5	ethanol	1,800 ppm
67-56-1	methanol	530 ppm
67-63-0	propan-2-ol	400 ppm
67-64-1	acetone	200 ppm
71-23-8	propan-1-ol	250 ppm
71-36-3	butan-1-ol	60 ppm
75-05-8	acetonitrile	13 ppm
75-65-0	2-methylpropan-2-ol	150 ppm
78-83-1	butanol	150 ppm
78-93-3	butanone	200 ppm
107-12-0	propionitrile	0.27 ppm
107-18-6	allyl alcohol	0.09 ppm
107-21-1	ethanediol	30 ppm
107-87-9	pentan-2-one	150 ppm
108-10-1	4-methylpentan-2-one	75 ppm
123-91-1	1,4-dioxane	17 ppm
141-78-6	ethyl acetate	1,200 ppm

· PAC-2:

60-29-7	diethyl ether	3200* ppm
64-17-5	ethanol	3300* ppm
67-56-1	methanol	2,100 ppm
67-63-0	propan-2-ol	2000* ppm
67-64-1	acetone	3200* ppm
71-23-8	propan-1-ol	670 ppm
71-36-3	butan-1-ol	800 ppm
75-05-8	acetonitrile	50 ppm

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75-65-0	2-methylpropan-2-ol	1,300 ppm
78-83-1	butanol	1,300 ppm
78-93-3	butanone	2700* ppm
107-12-0	propionitrile	3.0 ppm
107-18-6	allyl alcohol	1.7 ppm
107-21-1	ethanediol	150 ppm
107-87-9	pentan-2-one	830 ppm
108-10-1	4-methylpentan-2-one	500 ppm
123-91-1	1,4-dioxane	320 ppm
141-78-6	ethyl acetate	1,700 ppm

· PAC-3:

60-29-7	diethyl ether	19000*** ppm
64-17-5	ethanol	15000* ppm
67-56-1	methanol	7200* ppm
67-63-0	propan-2-ol	12000** ppm
67-64-1	acetone	5700* ppm
71-23-8	propan-1-ol	4000* ppm
71-36-3	butan-1-ol	8000** ppm
75-05-8	acetonitrile	150 ppm
75-65-0	2-methylpropan-2-ol	8000* ppm
78-83-1	butanol	8000* ppm
78-93-3	butanone	4000* ppm
107-12-0	propionitrile	9.1 ppm
107-18-6	allyl alcohol	13 ppm
107-21-1	ethanediol	900 ppm
107-87-9	pentan-2-one	5000* ppm
108-10-1	4-methylpentan-2-one	3000* ppm
123-91-1	1,4-dioxane	760 ppm
141-78-6	ethyl acetate	10000** ppm

7 Handling and storage

· Handling:
· Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

· Information about protection against explosions and fires: Keep respiratory protective device available.

· Conditions for safe storage, including any incompatibilities
· Storage:
· Requirements to be met by storerooms and receptacles: No special requirements.

· Information about storage in one common storage facility: Not required.

· Further information about storage conditions: Keep receptacle tightly sealed.

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· **Specific end use(s)** No further relevant information available.

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8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see section 7.

· **Control parameters**

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

60-29-7 diethyl ether

PEL	Long-term value: 1200 mg/m ³ , 400 ppm
TLV	Short-term value: 500 ppm Long-term value: 400 ppm

64-17-5 ethanol

PEL	Long-term value: 1900 mg/m ³ , 1000 ppm
REL	Long-term value: 1900 mg/m ³ , 1000 ppm
TLV	Short-term value: 1000 ppm A3

67-56-1 methanol

PEL	Long-term value: 260 mg/m ³ , 200 ppm
REL	Short-term value: 325 mg/m ³ , 250 ppm Long-term value: 260 mg/m ³ , 200 ppm Skin
TLV	Short-term value: 250 ppm Long-term value: 200 ppm Skin; BEIc

107-12-0 propionitrile

PEL	Long-term value: 5 mg/m ³ as CN; Skin
REL	Long-term value: 14 mg/m ³ , 6 ppm
TLV	Ceiling limit value: NIC-10 ppm NIC-Skin

107-18-6 allyl alcohol

PEL	Long-term value: 5 mg/m ³ , 2 ppm Skin
REL	Short-term value: 10 mg/m ³ , 4 ppm Long-term value: 5 mg/m ³ , 2 ppm Skin
TLV	Long-term value: 0.5 ppm Skin, A4

108-10-1 4-methylpentan-2-one

PEL	Long-term value: 410 mg/m ³ , 100 ppm
REL	Short-term value: 300 mg/m ³ , 75 ppm Long-term value: 205 mg/m ³ , 50 ppm
TLV	Short-term value: 75 ppm Long-term value: 20 ppm BEI, A3

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123-91-1 1,4-dioxane

PEL	Long-term value: 360 mg/m ³ , 100 ppm Skin
REL	Ceiling limit value: 3.6* mg/m ³ , 1* ppm *30-min; See Pocket Guide App. A
TLV	Long-term value: 20 ppm Skin, A3

· Ingredients with biological limit values:
67-56-1 methanol

BEI	15 mg/L Medium: urine Time: end of shift Parameter: Methanol (background, nonspecific)
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108-10-1 4-methylpentan-2-one

BEI	1 mg/L Medium: urine Time: end of shift Parameter: MIBK
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· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work.
Store protective clothing separately.

· **Breathing equipment:**

When used as intended with Agilent instruments, the use of the product under normal laboratory conditions and with standard practices does not result in significant airborne exposures and therefore respiratory protection is not needed.

Under an emergency condition where a respirator is deemed necessary, use a NIOSH or equivalent approved device/equipment with appropriate organic or acid gas cartridge.

· **Protection of hands:**

Although not recommended for constant contact with the chemicals or for clean-up, nitrile gloves 11-13 mil thickness are recommended for normal use. The breakthrough time is 1 hr. For cleaning a spill where there is direct contact of the chemical, butyl rubber gloves are recommended 12-15 mil thickness with breakthrough times exceeding 4 hrs. Supplier recommendations should be followed.

· **Material of gloves**

For normal use: nitrile rubber, 11-13 mil thickness
For direct contact with the chemical: butyl rubber, 12-15 mil thickness

· **Penetration time of glove material**

For normal use: nitrile rubber: 1 hour
For direct contact with the chemical: butyl rubber: >4 hours

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· Eye protection:



Tightly sealed goggles

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Appearance:

Form:	Fluid
Color:	Colorless
Odor:	Odorless
Odor threshold:	Not determined.

· pH-value: Not determined.

· Change in condition

Melting point/Melting range:	0 °C (32 °F)
Boiling point/Boiling range:	100 °C (212 °F)

· Flash point: Not applicable.

· Flammability (solid, gaseous): Not applicable.

· Decomposition temperature: Not determined.

· Ignition temperature: Product is not selfigniting.

· Danger of explosion: Product does not present an explosion hazard.

· Explosion limits:

Lower:	Not determined.
Upper:	Not determined.

· Vapor pressure at 20 °C (68 °F): 23 hPa (17.3 mm Hg)

· Density at 20 °C (68 °F): 0.99391 g/cm³ (8.29418 lbs/gal)

· Relative density: Not determined.

· Vapor density: Not determined.

· Evaporation rate: Not determined.

· Solubility in / Miscibility with

Water: Not miscible or difficult to mix.

· Partition coefficient (n-octanol/water): Not determined.

· Viscosity:

Dynamic:	Not determined.
Kinematic:	Not determined.

· Solvent content:

Organic solvents:	2.8 %
Water:	96.4 %

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VOC content:	2.60 % 25.8 g/l / 0.22 lb/gal
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Other information	No further relevant information available.
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10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

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

ATE (Acute Toxicity Estimate)

Oral	LD50	12,117 mg/kg (rat)
Dermal	LD50	>5,133 mg/kg (rabbit)
Inhalative	LC50/4 h	750 mg/L

60-29-7 diethyl ether

Oral	LD50	1,215 mg/kg (rat)
Dermal	LD50	>14.2 mg/kg (rabbit)
Inhalative	LC50/4 h	73,000 mg/L (rat)

64-17-5 ethanol

Oral	LD50	>5,000 mg/kg (rat)
Inhalative	LC50/4 h	20,000 mg/L (rat)

67-56-1 methanol

Oral	LD50	5,628 mg/kg (rat)
Dermal	LD50	15,800 mg/kg (rabbit)

107-12-0 propionitrile

Oral	LD50	39 mg/kg (rat)
Dermal	LD50	210 mg/kg (rabbit)

107-18-6 allyl alcohol

Oral	LD50	64 mg/kg (rat)
Dermal	LD50	45 mg/kg (rabbit)

108-10-1 4-methylpentan-2-one

Oral	LD50	2,080 mg/kg (rat)
Dermal	LD50	16,000 mg/kg (rab)

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Inhalative	LC50/4 h	>16,000 mg/kg (rabbit) 11 mg/L (ATE) >8.2 mg/L (rat)
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123-91-1 1,4-dioxane

Oral	LD50	5,700 mg/kg (mouse) 4,200 mg/kg (rat)
Dermal	LD50	7,858 mg/kg (rabbit)
Inhalative	LC50/4 h	46 mg/L (rat)

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

64-17-5	ethanol	1
67-63-0	propan-2-ol	3
108-10-1	4-methylpentan-2-one	2B
123-91-1	1,4-dioxane	2B

· **NTP (National Toxicology Program)**

123-91-1	1,4-dioxane	R
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· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

US

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13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· Not Regulated, De minimis Quantities	-
· UN-Number	
· DOT, ADN, IMDG, IATA	not regulated
· UN proper shipping name	
· DOT, ADN, IMDG, IATA	not regulated
· Transport hazard class(es)	
· DOT, ADN, IMDG, IATA	
· Class	not regulated
· Packing group	
· DOT, IMDG, IATA	not regulated
· Environmental hazards:	Not applicable.
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of MARPOL/73/78 and the IBC Code	Not applicable.
· UN "Model Regulation":	not regulated

*** 15 Regulatory information**

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

· Section 355 (extremely hazardous substances):	
107-12-0	propionitrile
107-18-6	allyl alcohol
· Section 313 (Specific toxic chemical listings):	
67-56-1	methanol
67-63-0	propan-2-ol
71-36-3	butan-1-ol
75-05-8	acetonitrile
75-65-0	2-methylpropan-2-ol
107-18-6	allyl alcohol
107-21-1	ethanediol

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108-10-1	4-methylpentan-2-one
123-91-1	1,4-dioxane

· TSCA (Toxic Substances Control Act):

All components have the value ACTIVE.

· Hazardous Air Pollutants

67-56-1	methanol
75-05-8	acetonitrile
107-21-1	ethanediol
108-10-1	4-methylpentan-2-one
123-91-1	1,4-dioxane

· Proposition 65
· Chemicals known to cause cancer:

108-10-1	4-methylpentan-2-one
123-91-1	1,4-dioxane

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

64-17-5	ethanol
67-56-1	methanol
107-21-1	ethanediol
108-10-1	4-methylpentan-2-one

· Carcinogenic categories
· EPA (Environmental Protection Agency)

67-64-1	acetone	I
71-36-3	butan-1-ol	D
75-05-8	acetonitrile	CBD, D
75-65-0	2-methylpropan-2-ol	SC
78-93-3	butanone	I
108-10-1	4-methylpentan-2-one	I
123-91-1	1,4-dioxane	L

· TLV (Threshold Limit Value)

64-17-5	ethanol	A3
67-63-0	propan-2-ol	A4
67-64-1	acetone	A4
71-23-8	propan-1-ol	A4
75-05-8	acetonitrile	A4
75-65-0	2-methylpropan-2-ol	A4
107-18-6	allyl alcohol	A4
107-21-1	ethanediol	A4

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123-91-1	1,4-dioxane	A3
· NIOSH-Ca (National Institute for Occupational Safety and Health)		
123-91-1	1,4-dioxane	

· **National regulations:**

· **Information about limitation of use:**

Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation.
Exceptions can be made by the authorities in certain cases.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

The information contained in this document is based on Agilent's state of knowledge at the time of preparation.
No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

· **Department issuing SDS:** Document Control / Regulatory

· **Contact:** pdl-acg-regulatory-cq@agilent.com

· **Date of preparation / last revision** 08/23/2024 / 4

· **Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

BEI: Biological Exposure Limit

Carcinogenicity 1A: Carcinogenicity – Category 1A

· *** Data compared to the previous version altered.**