

Revision date 08/23/2024

1 Identification

· Product identifier

· Product Name: F003 Solvent List Standard (1X1 mL)

· Part number: FLM-003-1

· 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



GHS02 Flame

Flammable Liquids 2

H225 Highly flammable liquid and vapor.



GHS06 Skull and crossbones

Acute Toxicity - Inhalation 3

H331 Toxic if inhaled.



GHS08 Health hazard

Carcinogenicity 2

H351 Suspected of causing cancer.

Specific Target Organ Toxicity - Single Exposure 1 H370 Causes damage to the central nervous system and the visual organs.

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







GHS02

GHS06

GHS08

- · Signal word Danger
- · Hazard-determining components of labeling:

methanol ethylbenzene

4-methylpentan-2-one

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· Hazard statements

H225 Highly flammable liquid and vapor.

H331 Toxic if inhaled.

H351 Suspected of causing cancer.

H370 Causes damage to the central nervous system and the visual organs.

· Precautionary statements

P210	Keep away from heat/sparks/open flames/hot surfaces No smoking.
P241	Use explosion-proof electrical/ventilating/lighting/equipment.

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P240 Ground/bond container and receiving equipment.

P242 Use only non-sparking tools.

P243 Take precautionary measures against static discharge.

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/

shower.

P321 Specific treatment (see on this label).

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P308+P313 IF exposed or concerned: Get medical advice/attention.
P370+P378 In case of fire: Use CO2, powder or water spray to extinguish.

P405 Store locked up.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P403+P235 Store in a well-ventilated place. Keep cool.

P501 Dispose of contents/container in accordance with local/regional/national/international

regulations.

· Classification system:

· NFPA ratings (scale 0 - 4)



Health = 1 Fire = 3Reactivity = 0

· 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.

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U	is components:	
67-56-1	methanol	97.472%
		0.2528%
		0.2528%
108-10-1	4-methylpentan-2-one	0.2528%
108-94-1	cyclohexanone	0.2528%

4 First-aid measures

- · Description of first aid measures
- · General information:

Immediately remove any clothing soiled by the product.

Remove breathing apparatus only after contaminated clothing have been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration.

· After inhalation:

Supply fresh air or oxygen; call for doctor.

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

- · After skin contact: Immediately wash with water and soap and rinse thoroughly.
- · After eve contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
- · 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
- $\cdot \ Suitable \ extinguishing \ agents:$

CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

- · For safety reasons unsuitable extinguishing agents: Water with full jet
- · Special hazards arising from the substance or mixture

During heating or in case of fire poisonous gases are produced.

- · Advice for firefighters
- · Protective equipment: Mouth respiratory protective device.

6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures

Mount respiratory protective device.

Wear protective equipment. Keep unprotected persons away.

- 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.

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See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

· Protectiv	e Action Criteria for Chemicals		
· PAC-1:			
67-56-1	methanol		530 ppm
60-29-7	diethyl ether		500 ppm
67-64-1	acetone		200 ppm
71-36-3	butan-1-ol		60 ppm
	ethylbenzene		33 ppm
108-10-1	4-methylpentan-2-one		75 ppm
108-38-3	m-xylene		130 ppm
108-94-1	cyclohexanone		60 ppm
141-78-6	ethyl acetate		1,200 ppm
· PAC-2:			
67-56-1	methanol	:	2,100 ppm
60-29-7	diethyl ether		3200* ppm
67-64-1	acetone		3200* ppm
71-36-3	butan-1-ol		800 ppm
100-41-4	ethylbenzene		1100* ppm
108-10-1	4-methylpentan-2-one		500 ppm
108-38-3	m-xylene		920 ppm
108-94-1	cyclohexanone		830 ppm
141-78-6	ethyl acetate		1,700 ppm
· PAC-3:			
67-56-1	methanol	720	0* ppm
60-29-7	diethyl ether	190	00*** ppm
67-64-1	acetone	570	0* ppm
71-36-3	butan-1-ol	800	0** ppm
100-41-4	ethylbenzene	180	0* ppm
			0* ppm
108-38-3			0* ppm
108-94-1			0* ppm
141-78-6	ethyl acetate	100	00** ppm

7 Handling and storage

- · Handling:
- · Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Prevent formation of aerosols.

· Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.

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Protect against electrostatic charges.

Keep respiratory protective device available.

- · Conditions for safe storage, including any incompatibilities
- · Storage:
- · Requirements to be met by storerooms and receptacles: Store in a cool location.
- · Information about storage in one common storage facility: Not required.
- · Further information about storage conditions:

Keep receptacle tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

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

8 Exposure controls/personal protection

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

· Control parameters

methanol ong-term value: 260 mg/m³, 200 ppm nort-term value: 325 mg/m³, 250 ppm ong-term value: 260 mg/m³, 200 ppm xin
nort-term value: 325 mg/m³, 250 ppm ong-term value: 260 mg/m³, 200 ppm
ong-term value: 260 mg/m³, 200 ppm
Kin
nort-term value: 250 ppm ong-term value: 200 ppm kin; BEIc
diethyl ether
ong-term value: 1200 mg/m³, 400 ppm
nort-term value: 500 ppm ong-term value: 400 ppm
4 ethylbenzene
ong-term value: 435 mg/m³, 100 ppm
nort-term value: 545 mg/m³, 125 ppm ong-term value: 435 mg/m³, 100 ppm
ong-term value: 20 ppm TO, BEI, A3
1 4-methylpentan-2-one
ong-term value: 410 mg/m³, 100 ppm
nort-term value: 300 mg/m³, 75 ppm ong-term value: 205 mg/m³, 50 ppm
nort-term value: 75 ppm ong-term value: 20 ppm EI, A3
1 cyclohexanone
ong-term value: 200 mg/m³, 50 ppm



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REL Long-term value: 100 mg/m³, 25 ppm

Skin

TLV Short-term value: 50 ppm Long-term value: 20 ppm

Skin, BEI, A3

· Ingredients with biological limit values:

67-56-1 methanol

BEI 15 mg/L

Medium: urine Time: end of shift

Parameter: Methanol (background, nonspecific)

100-41-4 ethylbenzene

BEI 0.15 g/g creatinine

Medium: urine

Time: end of shift at end of workweek

Parameter: Sum of mandelic acid and phenylglyoxylic acid (nonspecific)

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

BEI 1 mg/L

Medium: urine Time: end of shift Parameter: MIBK

108-94-1 cyclohexanone

BEI 80 mg/L

Medium: urine

Time: end of shift at end of workweek

Parameter: 1.2-Cyclohexanediol (with hydrolysis, nonspecific, nonquantitative)

8 mg/L

Medium: urine Time: end of shift

Parameter: Cyclohexanol (with hydrolysis, nonspecific, nonquantitative)

- · 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.

Immediately remove all soiled and contaminated clothing.

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.

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· 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

· Eye protection:



Tightly sealed goggles

Information on basic physical and c	hemical properties
General Information	
Appearance:	
Form:	Fluid
Color:	Colorless
Odor:	Alcohol-like
Odor threshold:	Not determined.
pH-value:	Not determined.
Change in condition	
Melting point/Melting range:	-98 °C (-144.4 °F)
Boiling point/Boiling range:	64.7 °C (148.5 °F)
Flash point:	9 °C (48.2 °F)
Flammability (solid, gaseous):	Highly flammable.
Auto igniting:	455 °C (851 °F)
Decomposition temperature:	Not determined.
Ignition temperature:	Product is not selfigniting.
Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
Explosion limits:	
Lower:	5.5 Vol %
Upper:	44 Vol %
Vapor pressure at 20 °C (68 °F):	100 hPa (75 mm Hg)
Density at 20 °C (68 °F):	0.80112 g/cm³ (6.68535 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.



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· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content:	
Organic solvents:	100.0 %
VOC content:	99.75 %
	799.1 g/l / 6.67 lb/gal
Solids content:	0.3 %
Other information	No further relevant information available.

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

 $\cdot \ Information \ on \ toxicological \ effects$

· Acute tox		congress effects
· LD/LC50	values tha	t are relevant for classification:
ATE (Acu	ite Toxicit	y Estimate)
Dermal	LD50	>5,518 mg/kg (rabbit)
Inhalative	LC50/4 h	3.08 mg/L
67-56-1 m	ethanol	
Oral	LD50	5,628 mg/kg (rat)
Dermal	LD50	15,800 mg/kg (rabbit)
60-29-7 di	ethyl ethe	r
Oral	LD50	1,215 mg/kg (rat)
Dermal	LD50	>14.2 mg/kg (rabbit)
Inhalative	LC50/4 h	73,000 mg/L (rat)
100-41-4	ethylbenze	ne
Oral	LD50	3,500 mg/kg (rat)
Dermal	LD50	15,354 mg/kg (rabbit)
Inhalative	LC50/4 h	17.2 mg/L (rat)
108-10-1	4-methylpe	entan-2-one
Oral	LD50	2,080 mg/kg (rat)
Dermal	LD50	16,000 mg/kg (rab)
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Inhalative LC50/4 h 11 mg/L (ATE)

>8.2 mg/L (rat)

>16,000 mg/kg (rabbit)

108-94-1 cyclohexanone

	•	
Oral	LD50	1,534 mg/kg (rat)
	LD50	1,534 mg/kg (rat) 794 mg/kg (rabbit)
Inhalative	LC50/4 h	>6.2 mg/L (rat)

- Primary irritant effect:
- · on the skin: No irritant effect.
- · on the eve: 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: Toxic

· Carcinogenic categories

`	ternational Agency for Research on Cancer)	
	o-xylene	3
	ethylbenzene	2B
106-42-3		3
	4-methylpentan-2-one	2B
	m-xylene	3
108-94-1	cyclohexanone	3

· NTP (National Toxicology Program)

None of the ingredients is listed.

· 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.



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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, IMDG, IATA UN1230

· UN proper shipping name

· DOT Methanol solution· IMDG, IATA METHANOL solution

· Transport hazard class(es)

· DOT



· Class 3 Flammable liquids

· Label 3, 6.1

·IMDG



· Class 3 Flammable liquids

· **Label** 3/6.1

 \cdot IATA



· Class 3 Flammable liquids

· Label 3 (6.1)

· Packing group

· DOT, IMDG, IATA

• Environmental hazards: Not applicable.

· Special precautions for user Warning: Flammable liquids

· Hazard identification number (Kemler code): 336

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· EMS Number:	F-E,S-D
· Stowage Category	В
· Stowage Code	SW2 Clear of living quarters.
· Transport in bulk according to Annex II of	
MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 1 L
•	On cargo aircraft only: 60 L
· IMDG	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2
• •	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN 1230 METHANOL SOLUTION, 3 (6.1), II

15 Regulatory information

- · Safety, health and environmental regulations/legislation specific for the substance or mixture No further relevant information available.
- ·Sara

~	
	55 (extremely hazardous substances):
None of t	he ingredients is listed.
· Section 3	13 (Specific toxic chemical listings):
67-56-1	methanol
71-36-3	butan-1-ol
95-47-6	o-xylene
100-41-4	ethylbenzene
106-42-3	p-xylene
108-10-1	4-methylpentan-2-one
108-38-3	m-xylene
· TSCA (T	Oxic Substances Control Act):
All comp	onents have the value ACTIVE.
· Hazardo	us Air Pollutants
67-56-1	methanol
95-47-6	o-xylene
100-41-4	ethylbenzene
106-42-3	p-xylene
108-10-1	4-methylpentan-2-one
108-38-3	m-xylene
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· Proposition 65

· Chemicals known to cause cancer:

100-41-4 ethylbenzene

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

· 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:

67-56-1 methanol

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

· Carcinogenic categories

· EPA (Environmental Protection Agency)			
67-64-1		I	
71-36-3	butan-1-ol	D	
	o-xylene	I	
	ethylbenzene	D	
106-42-3		I	
	4-methylpentan-2-one	I	
108-38-3	m-xylene	I	

·TLV (Threshold Limit Value)

1Lv (1 meshold Limit value)		
	acetone	A4
1	o-xylene	A4
	ethylbenzene	A3
	p-xylene	A4
	m-xylene	A4
108-94-1	cyclohexanone	A3

· NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

· 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

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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

Flammable Liquids 2: Flammable liquids – Category 2 Acute Toxicity - Inhalation 3: Acute toxicity – Category 3

Carcinogenicity 2: Carcinogenicity – Category 2

Specific Target Organ Toxicity - Single Exposure 1: Specific target organ toxicity (single exposure) - Category 1

* Data compared to the previous version altered.

US