Kit Components

Product code	Description
N9331053	**Standard GC Method 524.2 KIT**

Components:

N9331039	PCB Congener mix for Method 525.2
N9331048	Mix- Purgeable Gases methods 8260B/524.2
N9331049	Revision 4 Analytes for method 524.2
N9331050	Internal Standard for Method 524.2
N9331051	Surrogate Standard for Method 524.2
N9331052	Fortification Solution for Method 524.2

acc. to OSHA HCS

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*
1 Identification

· **Product identifier**

· **Trade name: PCB Congener mix for Method 525.2**
· **Article number** N9331039
· **Application of the substance / the mixture** Laboratory chemicals

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**

PerkinElmer, Inc.
710 Bridgeport Avenue
Shelton, Connecticut 06484 USA
CustomerCareUS@perkinelmer.com
203-925-4600
· **Emergency telephone number:**
CHEMTREC (within US) 800-424-9300
CHEMTREC (from outside US) +1 703-527-3887 (call collect)
CHEMTREC (within AU) +(61)-290372994

*
2 Hazard(s) identification

· **Classification of the substance or mixture**

Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.

Eye Irrit. 2A H319 Causes serious eye irritation.
STOT SE 3 H336 May cause drowsiness or dizziness.

· **Label elements**
· **GHS label elements**
The substance is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms** GHS02, GHS07
· **Signal word** Danger

· **Hazard-determining components of labeling:**
acetone
· **Hazard statements**
H225 Highly flammable liquid and vapor.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
· **Precautionary statements**
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting/equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.

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Trade name: PCB Congener mix for Method 525.2

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P261	Avoid breathing dust/fume/gas/mist/vapors/spray
P264	Wash thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353	If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a poison center/doctor if you feel unwell.
P337+P313	If eye irritation persists: Get medical advice/attention.
P370+P378	In case of fire: Use for extinction: CO2, powder or water spray.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

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

Health = 2
Fire = 3
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

HEALTH	2
FIRE	3
REACTIVITY	0

Health = 2
Fire = 3
Reactivity = 0

· **Other hazards**
The product does not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or formaldehydes.
· **Results of PBT and vPvB assessment**
· **PBT:** *Not applicable.*
· **vPvB:** *Not applicable.*

*

3 Composition/information on ingredients

· **Chemical characterization: Substances**
· **CAS No. Description**
67-64-1 acetone
· **Identification number(s)**
· **EC number:** *200-662-2*
· **Index number:** *606-001-00-8*
· **Chemical characterization: Mixtures**
· **Description:** *Mixture of the substances listed below with nonhazardous additions.*

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· **Hazardous components:**			
67-64-1	acetone	Flam. Liq. 2, H225 Eye Irrit. 2A, H319; STOT SE 3, H336	99.6%

· **Additional Components**			
68194-17-2	2,2',3,3',4,5',6,6'-Octachlorobiphenyl		0.05%
60233-25-2	2,2',3',4,6-Pentachlorobiphenyl		0.05%
35065-30-6	2,2',4,4',5,6'-Hexachlorobiphenyl		0.05%
2437-79-8	2,2',4,4'-Tetrachlorobiphenyl		0.05%
25569-80-6	2,3-Dichlorobiphenyl		0.05%
16606-02-3	2,4,5-Tetrachlorobiphenyl		0.05%
2051-95-8	3-benzoylpropionic acid	Skin Corr. 1B, H314	0.05%
35065-29-3	2,2',3,3',4,4',6-Heptachlorobiphenyl		0.05%

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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. If symptoms persist, consult a doctor.
· **After swallowing:** If symptoms persist consult 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:**
CO_2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:** No special measures required.

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6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Prevent seepage into sewage system, workpits and cellars.
Dilute with plenty of water.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

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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:**		
67-64-1	acetone	200 ppm

· **PAC-2:**		
67-64-1	acetone	3200* ppm

· **PAC-3:**		
67-64-1	acetone	5700* ppm

*

7 Handling and storage

· **Handling:**
· **Precautions for safe handling** *No special precautions are necessary if used correctly.*
· **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.

· **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 item 7.*

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**	
67-64-1 acetone	
PEL	Long-term value: 2400 mg/m³, 1000 ppm
REL	Long-term value: 590 mg/m³, 250 ppm
TLV	Short-term value: 1187 mg/m³, 500 ppm Long-term value: 594 mg/m³, 250 ppm BEI

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· **Ingredients with biological limit values:**

67-64-1 acetone

BEI	50 mg/L Medium: urine Time: end of shift Parameter: Acetone (nonspecific)

· **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.
Avoid contact with the eyes.
Avoid contact with the eyes and skin.
· **Breathing equipment:** Not required.
· **Protection of hands:**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· **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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **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 or safety glasses

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9 Physical and chemical properties

· **Information on basic physical and chemical properties**
· **General Information**
· **Appearance:**

Form:	Liquid
Color:	Transparent
· **Odor:**	Characteristic
· **Odor threshold:**	Not determined.
· **pH-value:**	Not determined.
· **Change in condition**	
Melting point/Melting range:	94.7 °C (202.5 °F)
Boiling point/Boiling range:	55 °C (131 °F)

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Trade name: PCB Congener mix for Method 525.2

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· **Flash point:**	< 0 °C (<32 °F)
· **Flammability (solid, gaseous):**	Not applicable.
· **Ignition temperature:**	465 °C (869 °F)
· **Decomposition temperature:**	Not determined.
· **Auto igniting:**	Product is not selfigniting.
· **Danger of explosion:**	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· **Explosion limits:**	
Lower:	2.6 Vol %
Upper:	13 Vol %
· **Vapor pressure at 20 °C (68 °F):**	233 hPa (174.8 mm Hg)
· **Density at 20 °C (68 °F):**	0.79 g/cm³ (6.59255 lbs/gal)
· **Relative density**	Not determined.
· **Vapor density**	Not determined.
· **Evaporation rate**	Not determined.
· **Solubility in / Miscibility with**	
Water:	Fully miscible.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not determined.
Kinematic:	Not determined.
· **Solvent content:**	
Organic solvents:	99.6 %
VOC content:	99.60 %
Solids content:	0.1 %
· **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.

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11 Toxicological information

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

· LD/LC50 values that are relevant for classification:		
67-64-1 acetone		
Oral	LD50	5,800 mg/kg (rat)
Dermal	LD50	20,000 mg/kg (rabbit)

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

· **Carcinogenic categories**

· IARC (International Agency for Research on Cancer)
None of the ingredients is listed.

· 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:**
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.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Dispose of container and materials in accordance with local, regional and national regulations.

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· **Uncleaned packagings:**
· **Recommendation:** *Disposal must be made according to official regulations.*
· **Recommended cleansing agent:** *Water, if necessary with cleansing agents.*

*

14 Transport information

· **UN-Number**	
· **DOT, ADR, IMDG, IATA**	*UN1090*
· **UN proper shipping name**	
· **DOT**	*Acetone*
· **ADR**	*1090 Acetone*
· **IMDG, IATA**	*ACETONE*
· **Transport hazard class(es)**	
· **DOT**	

· **Class**	*3 Flammable liquids*
· **Label**	*3*
· **ADR**	

· **Class**	*3 (F1) Flammable liquids*
· **Label**	*3*
· **IMDG, IATA**	

· **Class**	*3 Flammable liquids*
· **Label**	*3*
· **Packing group**	
· **DOT, ADR, IMDG, IATA**	*II*
· **Environmental hazards:**	
· **Marine pollutant:**	*No*
· **Special precautions for user**	*Warning: Flammable liquids*
· **Danger code (Kemler):**	*33*
· **EMS Number:**	*F-E,S-D*

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Trade name: PCB Congener mix for Method 525.2

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· **Stowage Category**	*E*
· **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: 5 L* *On cargo aircraft only: 60 L*
· **ADR**	
· **Excepted quantities (EQ)**	*Code: E2* *Maximum net quantity per inner packaging: 30 ml* *Maximum net quantity per outer packaging: 500 ml*
· **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 1090 ACETONE, 3, II*

*

15 Regulatory information

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

67-64-1	*acetone*	*Flam. Liq. 2, H225* *Eye Irrit. 2A, H319; STOT SE 3, H336*	*99.6%*
68194-17-2	*2,2',3,3',4,5',6,6'-Octachlorobiphenyl*		*0.05%*
60233-25-2	*2,2',3',4,6-Pentachlorobiphenyl*		*0.05%*

· **Sara**

· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

67-64-1	*acetone*
2051-95-8	*3-benzoylpropionic acid*

· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **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.

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· **Chemicals known to cause developmental toxicity:**
None of the ingredients is listed.

· **Cancerogenity categories**

· **EPA (Environmental Protection Agency)**

67-64-1	acetone	I

· **TLV (Threshold Limit Value established by ACGIH)**

67-64-1	acetone	A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

· **National regulations:**

· **Information about limitation of use:**
Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.

· **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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16 Other information

Disclaimer
The information provided in this Material Safety Data Sheet is based on our present knowledge, and believed to be correct at the date of publication. However, no representation is made concerning its accuracy and completeness. It is intended as guidance only, and is not to be considered a warranty or quality specification. All materials may present unknown hazards, and should be used with caution. Although certain hazards are described, we cannot guarantee that these are the only hazards which exist. PerkinElmer shall not be held liable for any damage resulting from handling or from contact with the product.

· **Department issuing SDS:** Environmental, Health and Safety
· **Contact:**
Within the USA: 1-(800)-762-4000
Outside the USA: 1-(203)-712-8488
· **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)
ICAO: International Civil Aviation Organisation
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
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
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

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Trade name: PCB Congener mix for Method 525.2

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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
Flam. Liq. 2: Flammable liquids – Category 2
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
· **** Data compared to the previous version altered.***

acc. to OSHA HCS

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*
1 Identification

· **Product identifier**

· **Trade name: Mix- Purgeable Gases methods 8260B/524.2**
· **Article number** N9331048
· **Application of the substance / the mixture** Laboratory chemicals

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**

PerkinElmer, Inc.
710 Bridgeport Avenue
Shelton, Connecticut 06484 USA
CustomerCareUS@perkinelmer.com
203-925-4600
· **Emergency telephone number:**
CHEMTREC (within US) 800-424-9300
CHEMTREC (from outside US) +1 703-527-3887 (call collect)
CHEMTREC (within AU) +(61)-290372994

*
2 Hazard(s) identification

· **Classification of the substance or mixture**

Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.

Skull and crossbones

Acute Tox. 3 H331 Toxic if inhaled.

Health hazard

Carc. 1A H350 May cause cancer.
STOT SE 1 H370 Causes damage to 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
vinyl chloride
bromomethane
· **Hazard statements**
H225 Highly flammable liquid and vapor.
H331 Toxic if inhaled.
H350 May cause cancer.

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Trade name: Mix- Purgeable Gases methods 8260B/524.2

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H370 Causes damage to organs.

· **Precautionary statements**

P201	*Obtain special instructions before use.*
P202	*Do not handle until all safety precautions have been read and understood.*
P210	*Keep away from heat/sparks/open flames/hot surfaces. - No smoking.*
P240	*Ground/bond container and receiving equipment.*
P241	*Use explosion-proof electrical/ventilating/lighting/equipment.*
P242	*Use only non-sparking tools.*
P243	*Take precautionary measures against static discharge.*
P260	*Do not breathe dust/fume/gas/mist/vapors/spray.*
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.*
P280	*Wear protective gloves/protective clothing/eye protection/face protection.*
P303+P361+P353	*If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.*
P304+P340	*IF INHALED: Remove person to fresh air and keep comfortable for breathing.*
P308+P313	*IF exposed or concerned: Get medical advice/attention.*
P321	*Specific treatment (see on this label).*
P370+P378	*In case of fire: Use for extinction: CO2, powder or water spray.*
P403+P233	*Store in a well-ventilated place. Keep container tightly closed.*
P403+P235	*Store in a well-ventilated place. Keep cool.*
P405	*Store locked up.*
P501	*Dispose of contents/container in accordance with local/regional/national/international regulations.*

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**

Health = 1
Fire = 3
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

*Health = *1*
Fire = 3
Reactivity = 0

· **Other hazards**

The product does not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or formaldehydes.

· **Results of PBT and vPvB assessment**

· **PBT:** *Not applicable.*

· **vPvB:** *Not applicable.*

*

3 Composition/information on ingredients

· **Chemical characterization: Substances**

· **CAS No. Description**

67-56-1 Methy Alcohol

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Trade name: Mix- Purgeable Gases methods 8260B/524.2

(Contd. of page 2)

· **Identification number(s)**
· **EC number:** 200-659-6
· **Index number:** 603-001-00
· **Chemical characterization: Mixtures**
· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Hazardous components:**			
67-56-1	methanol	Flam. Liq. 2, H225 Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331 STOT SE 1, H370	98.8%
75-00-3	chloroethane	Flam. Gas 1, H220; Flam. Liq. 1, H224 Press. Gas, H280 Carc. 2, H351	0.2%
74-87-3	chloromethane	Flam. Gas 1, H220 Press. Gas, H280 Carc. 2, H351; STOT RE 2, H373	0.2%
75-01-4	vinyl chloride	Flam. Gas 1, H220 Press. Gas, H280 Carc. 1A, H350	0.2%

· **Additional Components**		
74-83-9	bromomethane Press. Gas, H280 Acute Tox. 3, H301; Acute Tox. 3, H331 Muta. 2, H341; STOT RE 2, H373 Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335	0.2%
75-69-4	trichlorofluoromethane	0.2%
75-43-4	dichlorofluoromethane Press. Gas, H280	0.2%

*

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 eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:** Do not induce vomiting; immediately call for medical help.
· **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.

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Trade name: Mix- Purgeable Gases methods 8260B/524.2

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*
5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:** Mouth respiratory protective device.
· **Additional information** Cool endangered receptacles with water spray.

*
6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Prevent seepage into sewage system, workpits and cellars.
Dilute with plenty of 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 item 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:**		
67-56-1	methanol	530 ppm
75-00-3	chloroethane	300 ppm
74-83-9	bromomethane	19 ppm
74-87-3	chloromethane	150 ppm
75-69-4	trichlorofluoromethane	91 ppm
75-01-4	vinyl chloride	250 ppm
75-43-4	dichlorofluoromethane	30 ppm

· **PAC-2:**		
67-56-1	methanol	2,100 ppm
75-00-3	chloroethane	5100* ppm
74-83-9	bromomethane	210 ppm
74-87-3	chloromethane	910 ppm
75-69-4	trichlorofluoromethane	1,000 ppm
75-01-4	vinyl chloride	1,200 ppm
75-43-4	dichlorofluoromethane	8,300 ppm

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· **PAC-3:**		
67-56-1	methanol	7200* ppm
75-00-3	chloroethane	20000** ppm
74-83-9	bromomethane	740 ppm
74-87-3	chloromethane	3,000 ppm
75-69-4	trichlorofluoromethane	10,000 ppm
75-01-4	vinyl chloride	4800* ppm
75-43-4	dichlorofluoromethane	50,000 ppm

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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 ignition sources away - Do not smoke.
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.

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8 Exposure controls/personal protection

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

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**	
67-56-1 methanol	
PEL	Long-term value: 260 mg/m³, 200 ppm
REL	Short-term value: 325 mg/m³, 250 ppm Long-term value: 260 mg/m³, 200 ppm Skin
TLV	Short-term value: 328 mg/m³, 250 ppm Long-term value: 262 mg/m³, 200 ppm Skin; BEI
75-00-3 chloroethane	
PEL	Long-term value: 2600 mg/m³, 1000 ppm

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REL	Handle with caution; See Pocket Guide App. C
TLV	Long-term value: 264 mg/m³, 100 ppm Skin
74-87-3 chloromethane	
PEL	Long-term value: 100 ppm Ceiling limit value: 200; 300* ppm *5-min peak in any 3 hrs
REL	See Pocket Guide App. A
TLV	Short-term value: 207 mg/m³, 100 ppm Long-term value: 103 mg/m³, 50 ppm Skin
75-01-4 vinyl chloride	
PEL	Short-term value: 5* ppm Long-term value: 1 ppm *Avg. not exceeding any 15 min; see 29CFR1910.1017
REL	See Pocket Guide App.A
TLV	Long-term value: 2.6 mg/m³, 1 ppm

· **Ingredients with biological limit values:**

67-56-1 methanol	
BEI	15 mg/L Medium: urine Time: end of shift Parameter: Methanol (background, nonspecific)

· **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:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
· **Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· **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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

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· **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 or safety glasses

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9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	*Liquid*
Color:	*Transparent*
· **Odor:**	*Characteristic*
· **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 °C (147.2 °F)*
· **Flash point:**	*< 23 °C (<73.4 °F)*
· **Flammability (solid, gaseous):**	*Not applicable.*
· **Ignition temperature:**	*455 °C (851 °F)*
· **Decomposition temperature:**	*Not determined.*
· **Auto igniting:**	*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):**	*128 hPa (96 mm Hg)*
· **Density at 20 °C (68 °F):**	*0.79 g/cm³ (6.59255 lbs/gal)*
· **Relative density**	*Not determined.*
· **Vapor density**	*Not determined.*
· **Evaporation rate**	*Not determined.*
· **Solubility in / Miscibility with**	
Water:	*Fully miscible.*
· **Partition coefficient (n-octanol/water):**	*Not determined.*

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· **Viscosity:**	
Dynamic:	Not determined.
Kinematic:	Not determined.
· **Solvent content:**	
Organic solvents:	99.0 %
VOC content:	99.00 %
· **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.

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11 Toxicological information

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

· **LD/LC50 values that are relevant for classification:**		
67-56-1 methanol		
Oral	LD50	5,628 mg/kg (rat)
Dermal	LD50	15,800 mg/kg (rabbit)
74-83-9 bromomethane		
Oral	LD50	214 mg/kg (rat)
Inhalative	LC50/4 h	302 mg/l (rat)
75-69-4 trichlorofluoromethane		
Oral	LD50	>15,000 mg/kg (rat)
75-01-4 vinyl chloride		
Oral	LD50	500 mg/kg (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:
Toxic

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· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**		
75-00-3	chloroethane	3
74-83-9	bromomethane	3
74-87-3	chloromethane	3
75-01-4	vinyl chloride	1

· **NTP (National Toxicology Program)**		
75-01-4	vinyl chloride	K

· **OSHA-Ca (Occupational Safety & Health Administration)**	
75-01-4	vinyl chloride

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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:**
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:**
Dispose of container and materials in accordance with local, regional and national regulations.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.
· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

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14 Transport information

· **UN-Number**	
· **DOT, ADR, IMDG, IATA**	UN1992
· **UN proper shipping name**	
· **DOT**	Flammable liquids, toxic, n.o.s. (Methanol)

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· **ADR**	*1992 Flammable liquids, toxic, n.o.s. (Methanol)*
· **IMDG, IATA**	*FLAMMABLE LIQUID, TOXIC, N.O.S. (METHANOL)*

· **Transport hazard class(es)**

· **DOT**

· **Class**	*3 Flammable liquids*
· **Label**	*3, 6.1*

· **ADR**

· **Class**	*3 (FT1) Flammable liquids*
· **Label**	*3+6.1*

· **IMDG**

· **Class**	*3 Flammable liquids*
· **Label**	*3/6.1*

· **IATA**

· **Class**	*3 Flammable liquids*
· **Label**	*3 (6.1)*
· **Packing group**	
· **DOT, ADR, IMDG, IATA**	*II*
· **Environmental hazards:**	
· **Marine pollutant:**	*No*
· **Special precautions for user**	*Warning: Flammable liquids*
· **Danger code (Kemler):**	*336*
· **EMS Number:**	*F-E,S-D*
· **Stowage Category**	*B*
· **Stowage Code**	*SW2 Clear of living quarters.*
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	*Not applicable.*

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· **Transport/Additional information:**

· **DOT**

· **Quantity limitations**	On passenger aircraft/rail: 1 L On cargo aircraft only: 60 L
· **ADR**	
· **Excepted quantities (EQ)**	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· **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 1992 FLAMMABLE LIQUIDS, TOXIC, N.O.S. (METHANOL), 3 (6.1), II

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15 Regulatory information

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

67-56-1	methanol	Flam. Liq. 2, H225 Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331 STOT SE 1, H370	98.8%
75-00-3	chloroethane	Flam. Gas 1, H220; Flam. Liq. 1, H224 Press. Gas, H280 Carc. 2, H351	0.2%
74-83-9	bromomethane	Press. Gas, H280 Acute Tox. 3, H301; Acute Tox. 3, H331 Muta. 2, H341; STOT RE 2, H373 Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335	0.2%

· **Sara**

· **Section 355 (extremely hazardous substances):**

74-83-9	bromomethane

· **Section 313 (Specific toxic chemical listings):**

All ingredients are listed.

· **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

67-56-1	methanol
75-00-3	chloroethane
74-83-9	bromomethane
74-87-3	chloromethane
75-69-4	trichlorofluoromethane
75-01-4	vinyl chloride

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75-43-4	dichlorofluoromethane

· **Proposition 65**

· **Chemicals known to cause cancer:**	
75-00-3	chloroethane
75-01-4	vinyl chloride

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**	
74-87-3	chloromethane

· **Chemicals known to cause developmental toxicity:**	
67-56-1	methanol
74-83-9	bromomethane
74-87-3	chloromethane

· **Cancerogenity categories**

· **EPA (Environmental Protection Agency)**		
74-83-9	bromomethane	D
74-87-3	chloromethane	D, CBD
75-01-4	vinyl chloride	A, K/L

· **TLV (Threshold Limit Value established by ACGIH)**		
75-00-3	chloroethane	A3
74-83-9	bromomethane	A4
74-87-3	chloromethane	A4
75-69-4	trichlorofluoromethane	A4
75-01-4	vinyl chloride	A1

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**	
74-83-9	bromomethane
74-87-3	chloromethane
75-01-4	vinyl chloride

· **National regulations:**

· **Additional classification according to Decree on Hazardous Materials:**
Carcinogenic hazardous material group III (dangerous).

· **Information about limitation of use:**
Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.
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.

· **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

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

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16 Other information

Disclaimer
The information provided in this Material Safety Data Sheet is based on our present knowledge, and believed to be correct at the date of publication. However, no representation is made concerning its accuracy and completeness. It is intended as guidance only, and is not to be considered a warranty or quality specification. All materials may present unknown hazards, and should be used with caution. Although certain hazards are described, we cannot guarantee that these are the only hazards which exist. PerkinElmer shall not be held liable for any damage resulting from handling or from contact with the product.

· **Department issuing SDS:** *Environmental, Health and Safety*
· **Contact:**
Within the USA: 1-(800)-762-4000
Outside the USA: 1-(203)-712-8488
· **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)
ICAO: International Civil Aviation Organisation
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
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
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
Flam. Gas 1: Flammable gases – Category 1
Press. Gas: Gases under pressure – Compressed gas
Flam. Liq. 1: Flammable liquids – Category 1
Flam. Liq. 2: Flammable liquids – Category 2
Acute Tox. 3: Acute toxicity – Category 3
Carc. 1A: Carcinogenicity – Category 1A
Carc. 2: Carcinogenicity – Category 2
STOT SE 1: Specific target organ toxicity (single exposure) – Category 1
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
· *** Data compared to the previous version altered.**

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1 Identification

· **Product identifier**

· **Trade name: Revision 4 Analytes for method 524.2**
· **Article number** N9331049
· **Application of the substance / the mixture** Laboratory chemicals

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**

PerkinElmer, Inc.
710 Bridgeport Avenue
Shelton, Connecticut 06484 USA
CustomerCareUS@perkinelmer.com
203-925-4600
· **Emergency telephone number:**
CHEMTREC (within US) 800-424-9300
CHEMTREC (from outside US) +1 703-527-3887 (call collect)
CHEMTREC (within AU) +(61)-290372994

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2 Hazard(s) identification

· **Classification of the substance or mixture**

Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.

Skull and crossbones

Acute Tox. 3 H331 Toxic if inhaled.

Health hazard

Carc. 2 H351 Suspected of causing cancer.
Repr. 1A H360 May damage fertility or the unborn child.
STOT SE 1 H370 Causes damage to organs.
STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

Skin Sens. 1 H317 May cause an allergic skin reaction.

· **Label elements**
· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms** GHS02, GHS06, GHS07, GHS08
· **Signal word** Danger

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· **Hazard-determining components of labeling:**
methanol
acrylonitrile
nitrobenzene
methacrylonitrile
methyl acrylate
methyl methacrylate
ethyl methacrylate
· **Hazard statements**
H225 Highly flammable liquid and vapor.
H331 Toxic if inhaled.
H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer.
H360 May damage fertility or the unborn child.
H370 Causes damage to organs.
H373 May cause damage to organs through prolonged or repeated exposure.
· **Precautionary statements**

P201	*Obtain special instructions before use.*
P202	*Do not handle until all safety precautions have been read and understood.*
P210	*Keep away from heat/sparks/open flames/hot surfaces. - No smoking.*
P240	*Ground/bond container and receiving equipment.*
P241	*Use explosion-proof electrical/ventilating/lighting/equipment.*
P242	*Use only non-sparking tools.*
P243	*Take precautionary measures against static discharge.*
P260	*Do not breathe dust/fume/gas/mist/vapors/spray.*
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.*
P272	*Contaminated work clothing must not be allowed out of the workplace.*
P280	*Wear protective gloves/protective clothing/eye protection/face protection.*
P303+P361+P353	*If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.*
P304+P340	*IF INHALED: Remove person to fresh air and keep comfortable for breathing.*
P308+P313	*IF exposed or concerned: Get medical advice/attention.*
P321	*Specific treatment (see on this label).*
P314	*Get medical advice/attention if you feel unwell.*
P333+P313	*If skin irritation or rash occurs: Get medical advice/attention.*
P363	*Wash contaminated clothing before reuse.*
P370+P378	*In case of fire: Use for extinction: CO2, powder or water spray.*
P403+P233	*Store in a well-ventilated place. Keep container tightly closed.*
P403+P235	*Store in a well-ventilated place. Keep cool.*
P405	*Store locked up.*
P501	*Dispose of contents/container in accordance with local/regional/national/international regulations.*

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

Health = 1
Fire = 3
Reactivity = 0

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· **HMIS-ratings (scale 0 - 4)**

*Health = *1*
Fire = 3
Reactivity = 0

· **Other hazards**
The product does not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or formaldehydes.
· **Results of PBT and vPvB assessment**
· **PBT:** *Not applicable.*
· **vPvB:** *Not applicable.*

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3 Composition/information on ingredients

· **Chemical characterization: Substances**
· **CAS No. Description**
67-56-1 Methyl alcohol
· **Identification number(s)**
· **EC number:** *200-659-6*
· **Chemical characterization: Mixtures**
· **Description:** *Mixture of the substances listed below with nonhazardous additions.*

· **Hazardous components:**		
67-56-1	*methanol* *Flam. Liq. 2, H225* *Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331* *STOT SE 1, H370*	*95.2%*
74-88-4	*methyl iodide* *Acute Tox. 3, H301; Acute Tox. 3, H331* *Carc. 2, H351* *Acute Tox. 4, H312; Skin Irrit. 2, H315; STOT SE 3, H335*	*0.2%*
96-33-3	*methyl acrylate* *Flam. Liq. 2, H225* *Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317; STOT SE 3, H335*	*0.2%*
126-98-7	*methacrylonitrile* *Flam. Liq. 2, H225* *Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331* *Skin Sens. 1, H317*	*0.2%*
80-62-6	*methyl methacrylate* *Flam. Liq. 2, H225* *Skin Irrit. 2, H315; Skin Sens. 1, H317; STOT SE 3, H335*	*0.2%*

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79-46-9	2-nitropropane Flam. Liq. 3, H226 Carc. 1B, H350 Acute Tox. 4, H302; Acute Tox. 4, H332	0.2%
591-78-6	hexan-2-one Flam. Liq. 3, H226 Repr. 2, H361; STOT RE 1, H372 STOT SE 3, H336	0.2%
107-13-1	acrylonitrile Flam. Liq. 2, H225 Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331 Carc. 1B, H350 Eye Dam. 1, H318 Skin Irrit. 2, H315; Skin Sens. 1, H317; STOT SE 3, H335	0.2%
107-05-1	3-chloropropene Flam. Liq. 2, H225 Muta. 2, H341; Carc. 2, H351; STOT RE 2, H373 Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335	0.2%
75-15-0	carbon disulphide Flam. Liq. 2, H225 Repr. 2, H361; STOT RE 1, H372 Skin Irrit. 2, H315; Eye Irrit. 2A, H319	0.2%
98-95-3	nitrobenzene Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331 Carc. 2, H351; Repr. 1B, H360; STOT RE 1, H372 Flam. Liq. 4, H227	0.2%
76-01-7	pentachloroethane Carc. 2, H351; STOT RE 1, H372	0.2%
97-63-2	ethyl methacrylate Flam. Liq. 2, H225 Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317; STOT SE 3, H335	0.2%
67-72-1	hexachloroethane Carc. 2, H351; STOT RE 2, H373	0.2%
108-10-1	4-methylpentan-2-one Flam. Liq. 2, H225 Carc. 2, H351 Acute Tox. 4, H332; Eye Irrit. 2A, H319; STOT SE 3, H335	0.2%
109-99-9	tetrahydrofuran Flam. Liq. 2, H225 Carc. 2, H351 Eye Irrit. 2A, H319; STOT SE 3, H335	0.2%

· **Additional Components**

107-14-2	chloroacetonitrile Flam. Liq. 3, H226 Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331	0.2%

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107-12-0	propanenitrile Flam. Liq. 2, H225 Acute Tox. 2, H300; Acute Tox. 3, H311	0.2%
1634-04-4	tert-butyl methyl ether Flam. Liq. 2, H225 Skin Irrit. 2, H315	0.2%
513-88-2	1,1-dichloroacetone Flam. Liq. 3, H226 Eye Irrit. 2A, H319; STOT SE 3, H335	0.2%
109-69-3	1-chlorobutane Flam. Liq. 2, H225	0.2%
78-93-3	butanone Flam. Liq. 2, H225 Eye Irrit. 2A, H319; STOT SE 3, H336	0.2%
67-64-1	acetone Flam. Liq. 2, H225 Eye Irrit. 2A, H319; STOT SE 3, H336	0.2%
110-57-6	(2E)-1,4-dichloro-2-butene Flam. Liq. 3, H226	0.2%
60-29-7	diethyl ether Flam. Liq. 1, H224 Acute Tox. 4, H302; STOT SE 3, H336	0.2%

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4 First-aid measures

· **Description of first aid measures**
· **General information:**
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
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 eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:** Do not induce vomiting; immediately call for medical help.
· **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.

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5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:** Mouth respiratory protective device.

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6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Prevent seepage into sewage system, workpits and cellars.
Dilute with plenty of 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 item 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:**		
67-56-1	methanol	530 ppm
74-88-4	methyl iodide	25 ppm
96-33-3	methyl acrylate	6 ppm
126-98-7	methacrylonitrile	0.091 ppm
80-62-6	methyl methacrylate	17 ppm
79-46-9	2-nitropropane	30 ppm
591-78-6	hexan-2-one	10 ppm
107-13-1	acrylonitrile	0.15 ppm
107-05-1	3-chloropropene	2.8 ppm
75-15-0	carbon disulphide	13 ppm
98-95-3	nitrobenzene	3 ppm
107-14-2	chloroacetonitrile	0.45 ppm
76-01-7	pentachloroethane	130 mg/m³
107-12-0	propanenitrile	0.27 ppm
97-63-2	ethyl methacrylate	5.5 ppm
67-72-1	hexachloroethane	3 ppm
1634-04-4	tert-butyl methyl ether	50 ppm

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109-69-3	1-chlorobutane	4.1 ppm
78-93-3	butanone	200 ppm
108-10-1	4-methylpentan-2-one	75 ppm
67-64-1	acetone	200 ppm
109-99-9	tetrahydrofuran	100 ppm
110-57-6	(2E)-1,4-dichloro-2-butene	0.078 ppm
60-29-7	diethyl ether	500 ppm

· **PAC-2:**

67-56-1	methanol	2,100 ppm
74-88-4	methyl iodide	50 ppm
96-33-3	methyl acrylate	170 ppm
126-98-7	methacrylonitrile	1.0 ppm
80-62-6	methyl methacrylate	120 ppm
79-46-9	2-nitropropane	380 ppm
591-78-6	hexan-2-one	830 ppm
107-13-1	acrylonitrile	1.7 ppm
107-05-1	3-chloropropene	54 ppm
75-15-0	carbon disulphide	160 ppm
98-95-3	nitrobenzene	20 ppm
107-14-2	chloroacetonitrile	5.0 ppm
76-01-7	pentachloroethane	730 mg/m³
107-12-0	propanenitrile	3.0 ppm
97-63-2	ethyl methacrylate	61 ppm
67-72-1	hexachloroethane	36 ppm
1634-04-4	tert-butyl methyl ether	570 ppm
109-69-3	1-chlorobutane	45 ppm
78-93-3	butanone	2700* ppm
108-10-1	4-methylpentan-2-one	500 ppm
67-64-1	acetone	3200* ppm
109-99-9	tetrahydrofuran	500 ppm
110-57-6	(2E)-1,4-dichloro-2-butene	0.86 ppm
60-29-7	diethyl ether	3200* ppm

· **PAC-3:**

67-56-1	methanol	7200* ppm
74-88-4	methyl iodide	125 ppm
96-33-3	methyl acrylate	1,000 ppm
126-98-7	methacrylonitrile	3.1 ppm
80-62-6	methyl methacrylate	570 ppm
79-46-9	2-nitropropane	2,300 ppm
591-78-6	hexan-2-one	5000* ppm

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107-13-1	acrylonitrile	28 ppm
107-05-1	3-chloropropene	140 ppm
75-15-0	carbon disulphide	480 ppm
98-95-3	nitrobenzene	200 ppm
107-14-2	chloroacetonitrile	15 ppm
76-01-7	pentachloroethane	1,200 mg/m³
107-12-0	propanenitrile	9.1 ppm
97-63-2	ethyl methacrylate	370 ppm
67-72-1	hexachloroethane	300 ppm
1634-04-4	tert-butyl methyl ether	5300* ppm
109-69-3	1-chlorobutane	340 ppm
78-93-3	butanone	4000* ppm
108-10-1	4-methylpentan-2-one	3000* ppm
67-64-1	acetone	5700* ppm
109-99-9	tetrahydrofuran	5000* ppm
110-57-6	(2E)-1,4-dichloro-2-butene	3.8 ppm
60-29-7	diethyl ether	19000*** ppm

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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 ignition sources away - Do not smoke.
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.

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8 Exposure controls/personal protection

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

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· **Control parameters**
· **Components with limit values that require monitoring at the workplace:**
The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.
At this time, the remaining constituent has no known exposure limits.

67-56-1 methanol	
PEL	Long-term value: 260 mg/m³, 200 ppm
REL	Short-term value: 325 mg/m³, 250 ppm Long-term value: 260 mg/m³, 200 ppm Skin
TLV	Short-term value: 328 mg/m³, 250 ppm Long-term value: 262 mg/m³, 200 ppm Skin; BEI
74-88-4 methyl iodide	
PEL	Long-term value: 28 mg/m³, 5 ppm Skin
REL	Long-term value: 10 mg/m³, 2 ppm Skin; See Pocket Guide App. A
TLV	Long-term value: 12 mg/m³, 2 ppm Skin
96-33-3 methyl acrylate	
PEL	Long-term value: 35 mg/m³, 10 ppm Skin
REL	Long-term value: 35 mg/m³, 10 ppm Skin
TLV	Long-term value: 7 mg/m³, 2 ppm Skin; DSEN
126-98-7 methacrylonitrile	
REL	Long-term value: 3 mg/m³, 1 ppm Skin
TLV	Long-term value: 2.7 mg/m³, 1 ppm Skin
80-62-6 methyl methacrylate	
PEL	Long-term value: 410 mg/m³, 100 ppm
REL	Long-term value: 410 mg/m³, 100 ppm
TLV	Short-term value: 410 mg/m³, 100 ppm Long-term value: 205 mg/m³, 50 ppm DSEN
79-46-9 2-nitropropane	
PEL	Long-term value: 90 mg/m³, 25 ppm
REL	See Pocket Guide App. A
TLV	Long-term value: 36 mg/m³, 10 ppm

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591-78-6 hexan-2-one	
PEL	Long-term value: 410 mg/m³, 100 ppm
REL	Long-term value: 4 mg/m³, 1 ppm
TLV	Short-term value: 40 mg/m³, 10 ppm Long-term value: 20 mg/m³, 5 ppm Skin, BEI
107-13-1 acrylonitrile	
PEL	Long-term value: 2 ppm Ceiling limit value: 10 ppm Skin; see 29 CRF 1910.1045
REL	Long-term value: 1 ppm Ceiling limit value: 10* ppm *15-min; Skin; See Pocket Guide App. A
TLV	Long-term value: 4.3 mg/m³, 2 ppm Skin
107-05-1 3-chloropropene	
PEL	Long-term value: 3 mg/m³, 1 ppm
REL	Short-term value: 6 mg/m³, 2 ppm Long-term value: 3 mg/m³, 1 ppm
TLV	Short-term value: 6 mg/m³, 2 ppm Long-term value: 3 mg/m³, 1 ppm Skin
75-15-0 carbon disulphide	
PEL	Long-term value: 20 ppm Ceiling limit value: 30; 100* ppm *30-min peak per 8-hr shift
REL	Short-term value: 30 mg/m³, 10 ppm Long-term value: 3 mg/m³, 1 ppm Skin
TLV	Long-term value: 3.13 mg/m³, 1 ppm Skin, BEI
98-95-3 nitrobenzene	
PEL	Long-term value: 5 mg/m³, 1 ppm Skin
REL	Long-term value: 5 mg/m³, 1 ppm Skin
TLV	Long-term value: 5 mg/m³, 1 ppm Skin; BEIm
76-01-7 pentachloroethane	
REL	Handle with caution; See Pocket Guide App. C
67-72-1 hexachloroethane	
PEL	Long-term value: 10 mg/m³, 1 ppm Skin

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REL	Long-term value: 10 mg/m³, 1 ppm Skin; See Pocket Guide Apps. A and C
TLV	Long-term value: 9.7 mg/m³, 1 ppm Skin
108-10-1 4-methylpentan-2-one	
PEL	Long-term value: 410 mg/m³, 100 ppm
REL	Short-term value: 300 mg/m³, 75 ppm Long-term value: 205 mg/m³, 50 ppm
TLV	Short-term value: 307 mg/m³, 75 ppm Long-term value: 82 mg/m³, 20 ppm BEI
109-99-9 tetrahydrofuran	
PEL	Long-term value: 590 mg/m³, 200 ppm
REL	Short-term value: 735 mg/m³, 250 ppm Long-term value: 590 mg/m³, 200 ppm
TLV	Short-term value: 295 mg/m³, 100 ppm Long-term value: 147 mg/m³, 50 ppm Skin

· **Ingredients with biological limit values:**

67-56-1 methanol	
BEI	15 mg/L Medium: urine Time: end of shift Parameter: Methanol (background, nonspecific)
591-78-6 hexan-2-one	
BEI	0.4 mg/L Medium: urine Time: end of shift at end of workweek Parameter: 2.5-Hexanedione without hydrolysis
75-15-0 carbon disulphide	
BEI	0.5 mg/g creatinine Medium: urine Time: end of shift Parameter: 2-Thioxothiazolidine-4-carboxylic acid (background, nonspecific)
98-95-3 nitrobenzene	
BEI	5 mg/g creatinine Medium: urine Time: end of shift at end of workweek Parameter: Total p-nitrophenol (nonspecific) 1.5 % of hemoglobin Medium: blood Time: end of shift Parameter: Methemoglobin (background, nonspecific, semi-quantitative)

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108-10-1 4-methylpentan-2-one	
BEI	1 mg/L Medium: urine Time: end of shift Parameter: MIBK
109-99-9 tetrahydrofuran	
BEI	2 mg/L Medium: urine Time: end of shift Parameter: Tetrahydrofuran

· **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:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
· **Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· **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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **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 or safety glasses

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9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Liquid
Color:	Transparent
· **Odor:**	Characteristic
· **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 °C (147.2 °F)
· **Flash point:**	< 23 °C (<73.4 °F)
· **Flammability (solid, gaseous):**	Not applicable.
· **Ignition temperature:**	455 °C (851 °F)
· **Decomposition temperature:**	Not determined.
· **Auto igniting:**	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):**	128 hPa (96 mm Hg)
· **Density at 20 °C (68 °F):**	0.79101 g/cm³ (6.60098 lbs/gal)
· **Relative density**	Not determined.
· **Vapor density**	Not determined.
· **Evaporation rate**	Not determined.
· **Solubility in / Miscibility with**	
Water:	Fully miscible.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not determined.
Kinematic:	Not determined.
· **Solvent content:**	
Organic solvents:	96.8 %
VOC content:	96.80 %
· **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.

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11 Toxicological information

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

· **LD/LC50 values that are relevant for classification:**		
67-56-1 methanol		
Oral	LD50	5,628 mg/kg (rat)
Dermal	LD50	15,800 mg/kg (rabbit)
126-98-7 methacrylonitrile		
Oral	LD50	120 mg/kg (rat)
Dermal	LD50	320 mg/kg (rabbit)
79-46-9 2-nitropropane		
Oral	LD50	720 mg/kg (rat)
107-13-1 acrylonitrile		
Oral	LD50	78 mg/kg (rat)
Dermal	LD50	250 mg/kg (rabbit)
Inhalative	LC50/4 h	425 mg/l (rat)
75-15-0 carbon disulphide		
Oral	LD50	3,188 mg/kg (rat)

· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** No irritating effect.
· **Sensitization:** Sensitization possible through skin contact.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Toxic
Irritant

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**		
74-88-4	methyl iodide	3
96-33-3	methyl acrylate	3
80-62-6	methyl methacrylate	3
79-46-9	2-nitropropane	2B

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107-13-1	acrylonitrile	2B
107-05-1	3-chloropropene	3
98-95-3	nitrobenzene	2B
107-14-2	chloroacetonitrile	3
76-01-7	pentachloroethane	3
67-72-1	hexachloroethane	2B
1634-04-4	tert-butyl methyl ether	3
108-10-1	4-methylpentan-2-one	2B
110-57-6	(2E)-1,4-dichloro-2-butene	3

· **NTP (National Toxicology Program)**

79-46-9	2-nitropropane	R
107-13-1	acrylonitrile	R
98-95-3	nitrobenzene	R
67-72-1	hexachloroethane	R

· **OSHA-Ca (Occupational Safety & Health Administration)**

107-13-1	acrylonitrile

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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:**
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:**
Dispose of container and materials in accordance with local, regional and national regulations.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.

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· **Recommended cleansing agent:** *Water, if necessary with cleansing agents.*

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14 Transport information

· **UN-Number**
· **DOT, ADR, IMDG, IATA** *UN1992*

· **UN proper shipping name**
· **DOT** *Flammable liquids, toxic, n.o.s. (Methanol)*
· **ADR** *1992 Flammable liquids, toxic, n.o.s. (Methanol)*
· **IMDG, IATA** *FLAMMABLE LIQUID, TOXIC, N.O.S. (METHANOL)*

· **Transport hazard class(es)**

· **DOT**

· **Class** *3 Flammable liquids*
· **Label** *3, 6.1*

· **ADR**

· **Class** *3 (FT1) Flammable liquids*
· **Label** *3+6.1*

· **IMDG**

· **Class** *3 Flammable liquids*
· **Label** *3/6.1*

· **IATA**

· **Class** *3 Flammable liquids*
· **Label** *3 (6.1)*

· **Packing group**
· **DOT, ADR, IMDG, IATA** *II*

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· **Environmental hazards:**	
· **Marine pollutant:**	No
· **Special precautions for user**	Warning: Flammable liquids
· **Danger code (Kemler):**	336
· **EMS Number:**	F-E,S-D
· **Stowage Category**	B
· **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
· **ADR**	
· **Excepted quantities (EQ)**	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· **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 1992 FLAMMABLE LIQUIDS, TOXIC, N.O.S. (METHANOL), 3 (6.1), II

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15 Regulatory information

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

67-56-1	methanol Flam. Liq. 2, H225 Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331 STOT SE 1, H370	95.2%
74-88-4	methyl iodide Acute Tox. 3, H301; Acute Tox. 3, H331 Carc. 2, H351 Acute Tox. 4, H312; Skin Irrit. 2, H315; STOT SE 3, H335	0.2%
96-33-3	methyl acrylate Flam. Liq. 2, H225 Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317; STOT SE 3, H335	0.2%

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· **Sara**

· **Section 355 (extremely hazardous substances):**	
126-98-7	methacrylonitrile
107-13-1	acrylonitrile
75-15-0	carbon disulphide
98-95-3	nitrobenzene
107-12-0	propanenitrile
110-57-6	(2E)-1,4-dichloro-2-butene

· **Section 313 (Specific toxic chemical listings):**	
67-56-1	methanol
74-88-4	methyl iodide
96-33-3	methyl acrylate
126-98-7	methacrylonitrile
80-62-6	methyl methacrylate
79-46-9	2-nitropropane
107-13-1	acrylonitrile
107-05-1	3-chloropropene
75-15-0	carbon disulphide
98-95-3	nitrobenzene
76-01-7	pentachloroethane
67-72-1	hexachloroethane
1634-04-4	tert-butyl methyl ether
78-93-3	butanone
108-10-1	4-methylpentan-2-one
110-57-6	(2E)-1,4-dichloro-2-butene

· **TSCA (Toxic Substances Control Act):**
All ingredients are listed.

67-56-1	methanol
74-88-4	methyl iodide
96-33-3	methyl acrylate
126-98-7	methacrylonitrile
80-62-6	methyl methacrylate
79-46-9	2-nitropropane
591-78-6	hexan-2-one
107-13-1	acrylonitrile
107-05-1	3-chloropropene
75-15-0	carbon disulphide
98-95-3	nitrobenzene
107-14-2	chloroacetonitrile
76-01-7	pentachloroethane

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107-12-0	propanenitrile
97-63-2	ethyl methacrylate
67-72-1	hexachloroethane
1634-04-4	tert-butyl methyl ether
109-69-3	1-chlorobutane
78-93-3	butanone
108-10-1	4-methylpentan-2-one
67-64-1	acetone
109-99-9	tetrahydrofuran
110-57-6	(2E)-1,4-dichloro-2-butene
60-29-7	diethyl ether

· **TSCA new (21st Century Act) (Substances not listed)**

126-98-7	methacrylonitrile
591-78-6	hexan-2-one

· **Proposition 65**

· **Chemicals known to cause cancer:**

74-88-4	methyl iodide
79-46-9	2-nitropropane
107-13-1	acrylonitrile
98-95-3	nitrobenzene
67-72-1	hexachloroethane
108-10-1	4-methylpentan-2-one

· **Chemicals known to cause reproductive toxicity for females:**

75-15-0	carbon disulphide

· **Chemicals known to cause reproductive toxicity for males:**

591-78-6	hexan-2-one
75-15-0	carbon disulphide
98-95-3	nitrobenzene

· **Chemicals known to cause developmental toxicity:**

67-56-1	methanol
591-78-6	hexan-2-one
75-15-0	carbon disulphide
108-10-1	4-methylpentan-2-one

· **Cancerogenity categories**

· **EPA (Environmental Protection Agency)**

96-33-3	methyl acrylate	D
80-62-6	methyl methacrylate	E, NL
591-78-6	hexan-2-one	II
107-13-1	acrylonitrile	B1

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acc. to OSHA HCS

Printing date 08/10/2018 *Review date 08/10/2018*

Trade name: Revision 4 Analytes for method 524.2

(Contd. of page 19)

107-05-1	3-chloropropene	C
98-95-3	nitrobenzene	L
67-72-1	hexachloroethane	L
109-69-3	1-chlorobutane	D
78-93-3	butanone	I
108-10-1	4-methylpentan-2-one	I
67-64-1	acetone	I
109-99-9	tetrahydrofuran	SC

· **TLV (Threshold Limit Value established by ACGIH)**

96-33-3	methyl acrylate	A4
80-62-6	methyl methacrylate	A4
79-46-9	2-nitropropane	A3
107-13-1	acrylonitrile	A3
107-05-1	3-chloropropene	A3
75-15-0	carbon disulphide	A4
98-95-3	nitrobenzene	A3
67-72-1	hexachloroethane	A3
1634-04-4	tert-butyl methyl ether	A3
67-64-1	acetone	A4
109-99-9	tetrahydrofuran	A3

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

74-88-4	methyl iodide
79-46-9	2-nitropropane
107-13-1	acrylonitrile
67-72-1	hexachloroethane

· **National regulations:**

· **Information about limitation of use:**
Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.

· **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

*
16 Other information

Disclaimer
The information provided in this Material Safety Data Sheet is based on our present knowledge, and believed to be correct at the date of publication. However, no representation is made concerning its accuracy and completeness. It is intended as guidance only, and is not to be considered a warranty or quality specification. All materials may present unknown hazards, and should be used with caution. Although certain hazards are described, we cannot guarantee that these are the only hazards which exist. PerkinElmer shall not be held liable for any damage resulting from handling or from contact with the product.

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acc. to OSHA HCS

Printing date 08/10/2018 *Review date 08/10/2018*

Trade name: Revision 4 Analytes for method 524.2

(Contd. of page 20)

· **Department issuing SDS:** *Environmental, Health and Safety*
· **Contact:**
Within the USA: 1-(800)-762-4000
Outside the USA: 1-(203)-712-8488
· **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)
ICAO: International Civil Aviation Organisation
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
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
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
Flam. Liq. 2: Flammable liquids – Category 2
Flam. Liq. 3: Flammable liquids – Category 3
Flam. Liq. 4: Flammable liquids – Category 4
Acute Tox. 3: Acute toxicity – Category 3
Acute Tox. 4: Acute toxicity – Category 4
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
Skin Sens. 1: Skin sensitisation – Category 1
Muta. 2: Germ cell mutagenicity – Category 2
Carc. 1B: Carcinogenicity – Category 1B
Carc. 2: Carcinogenicity – Category 2
Carc. 2: Carcinogenicity – Category 2
Repr. 1A: Reproductive toxicity – Category 1A
Repr. 1B: Reproductive toxicity – Category 1B
Repr. 2: Reproductive toxicity – Category 2
STOT SE 1: Specific target organ toxicity (single exposure) – Category 1
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
· **** Data compared to the previous version altered.***

acc. to OSHA HCS

Printing date 08/10/2018 *Review date 08/10/2018*

*
1 Identification

· **Product identifier**

· **Trade name: Internal Standard for Method 524.2**
· **Article number** N9331050
· **Application of the substance / the mixture** Laboratory chemicals

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**

PerkinElmer, Inc.
710 Bridgeport Avenue
Shelton, Connecticut 06484 USA
CustomerCareUS@perkinelmer.com
203-925-4600
· **Emergency telephone number:**
CHEMTREC (within US) 800-424-9300
CHEMTREC (from outside US) +1 703-527-3887 (call collect)
CHEMTREC (within AU) +(61)-290372994

*
2 Hazard(s) identification

· **Classification of the substance or mixture**

Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.

Skull and crossbones

Acute Tox. 3 H331 Toxic if inhaled.

Health hazard

STOT SE 1 H370 Causes damage to organs.

· **Label elements**
· **GHS label elements**
The substance 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
· **Hazard statements**
H225 Highly flammable liquid and vapor.
H331 Toxic if inhaled.
H370 Causes damage to organs.
· **Precautionary statements**
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

(Contd. on page 2)

acc. to OSHA HCS

Printing date 08/10/2018 *Review date 08/10/2018*

Trade name: Internal Standard for Method 524.2

(Contd. of page 1)

P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting/equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
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.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353	If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P321	Specific treatment (see on this label).
P370+P378	In case of fire: Use for extinction: CO2, powder or water spray.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

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

Health = 1
Fire = 3
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

HEALTH	*1
FIRE	3
REACTIVITY	0

*Health = *1*
Fire = 3
Reactivity = 0

· **Other hazards**
The product does not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or formaldehydes.
· **Results of PBT and vPvB assessment**
· **PBT:** *Not applicable.*
· **vPvB:** *Not applicable.*

*
3 Composition/information on ingredients

· **Chemical characterization: Substances**
· **CAS No. Description**
67-56-1 methanol
· **Chemical characterization: Mixtures**
· **Description:** *Mixture of the substances listed below with nonhazardous additions.*

· **Hazardous components:**

67-56-1	*methanol*	*Flam. Liq. 2, H225* *Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331* *STOT SE 1, H370*	*99.9%*

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Trade name: Internal Standard for Method 524.2

(Contd. of page 2)

· **Additional Components**			
462-06-6	fluorobenzene	Flam. Liq. 2, H225	0.1%

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 eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:** Do not induce vomiting; immediately call for medical help.
· **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:**
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:** Mouth respiratory protective device.

*
6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Prevent seepage into sewage system, workpits and cellars.
Dilute with plenty of 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 item 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.

(Contd. on page 4)

(Contd. of page 3)

· **Protective Action Criteria for Chemicals**

· **PAC-1:**		
67-56-1	methanol	530 ppm
462-06-6	fluorobenzene	30 mg/m³

· **PAC-2:**		
67-56-1	methanol	2,100 ppm
462-06-6	fluorobenzene	330 mg/m³

· **PAC-3:**		
67-56-1	methanol	7200* ppm
462-06-6	fluorobenzene	1,200 mg/m³

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 ignition sources away - Do not smoke.
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 item 7.

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**	
67-56-1 methanol	
PEL	Long-term value: 260 mg/m³, 200 ppm
REL	Short-term value: 325 mg/m³, 250 ppm Long-term value: 260 mg/m³, 200 ppm Skin
TLV	Short-term value: 328 mg/m³, 250 ppm Long-term value: 262 mg/m³, 200 ppm Skin; BEI

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Trade name: Internal Standard for Method 524.2

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· **Ingredients with biological limit values:**

67-56-1 methanol

BEI	15 mg/L Medium: urine Time: end of shift Parameter: Methanol (background, nonspecific)

· **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:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
· **Protection of hands:**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· **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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **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 or safety glasses

*

9 Physical and chemical properties

· **Information on basic physical and chemical properties**
· **General Information**
· **Appearance:**

Form:	Liquid
Color:	Transparent
· **Odor:**	Alcohol-like
· **Odor threshold:**	Not determined.
· **pH-value:**	Not determined.
· **Change in condition**	
Melting point/Melting range:	-98 °C (-144.4 °F)

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acc. to OSHA HCS

Trade name: Internal Standard for Method 524.2

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Boiling point/Boiling range:	64 °C (147.2 °F)
· **Flash point:**	< 23 °C (<73.4 °F)
· **Flammability (solid, gaseous):**	Not applicable.
· **Ignition temperature:**	455 °C (851 °F)
· **Decomposition temperature:**	Not determined.
· **Auto igniting:**	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):**	128 hPa (96 mm Hg)
· **Density at 20 °C (68 °F):**	0.79023 g/cm³ (6.59447 lbs/gal)
· **Relative density**	Not determined.
· **Vapor density**	Not determined.
· **Evaporation rate**	Not determined.
· **Solubility in / Miscibility with**	
Water:	Fully miscible.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not determined.
Kinematic:	Not determined.
· **Solvent content:**	
Organic solvents:	99.9 %
VOC content:	99.90 %
· **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.

(Contd. on page 7)

(Contd. of page 6)

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11 Toxicological information

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

· LD/LC50 values that are relevant for classification:		
67-56-1 methanol		
Oral	LD50	5,628 mg/kg (rat)
Dermal	LD50	15,800 mg/kg (rabbit)

· **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:
Toxic

· **Carcinogenic categories**

· IARC (International Agency for Research on Cancer)
None of the ingredients is listed.

· 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:**
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.

*

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Dispose of container and materials in accordance with local, regional and national regulations.

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acc. to OSHA HCS

Printing date 08/10/2018 *Review date 08/10/2018*

Trade name: Internal Standard for Method 524.2

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· **Uncleaned packagings:**
· **Recommendation:** *Disposal must be made according to official regulations.*
· **Recommended cleansing agent:** *Water, if necessary with cleansing agents.*

*

14 Transport information

· **UN-Number**
· **DOT, ADR, IMDG, IATA** *UN1230*

· **UN proper shipping name**
· **DOT** *Methanol*
· **ADR** *1230 Methanol*
· **IMDG, IATA** *METHANOL*

· **Transport hazard class(es)**

· **DOT**

· **Class** *3 Flammable liquids*
· **Label** *3, 6.1*

· **ADR**

· **Class** *3 (FT1) Flammable liquids*
· **Label** *3+6.1*

· **IMDG**

· **Class** *3 Flammable liquids*
· **Label** *3/6.1*

· **IATA**

· **Class** *3 Flammable liquids*
· **Label** *3 (6.1)*

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Trade name: Internal Standard for Method 524.2

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· **Packing group**	
· **DOT, ADR, IMDG, IATA**	*II*
· **Environmental hazards:**	
· **Marine pollutant:**	*No*
· **Special precautions for user**	*Warning: Flammable liquids*
· **Danger code (Kemler):**	*336*
· **EMS Number:**	*F-E,S-D*
· **Stowage Category**	*B*
· **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*
· **ADR**	
· **Excepted quantities (EQ)**	*Code: E2* *Maximum net quantity per inner packaging: 30 ml* *Maximum net quantity per outer packaging: 500 ml*
· **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*
· **IATA**	
· **Remarks:**	*Small quanity exemption applies for up to 15 units*
· **UN "Model Regulation":**	*UN 1230 METHANOL, 3 (6.1), II*

*

15 Regulatory information

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

67-56-1	*methanol*	*Flam. Liq. 2, H225* *Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331* *STOT SE 1, H370*	*99.9%*
462-06-6	*fluorobenzene*	*Flam. Liq. 2, H225*	*0.1%*

· **Sara**

· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

67-56-1	*methanol*

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acc. to OSHA HCS

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Trade name: Internal Standard for Method 524.2

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· **TSCA (Toxic Substances Control Act):**
All ingredients are listed.

67-56-1	methanol
462-06-6	fluorobenzene

· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients is listed.

· **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

· **Cancerogenity categories**

· **EPA (Environmental Protection Agency)**
None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**
None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

· **National regulations:**

· **Information about limitation of use:**
Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.

· **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

*
16 Other information

Disclaimer
The information provided in this Material Safety Data Sheet is based on our present knowledge, and believed to be correct at the date of publication. However, no representation is made concerning its accuracy and completeness. It is intended as guidance only, and is not to be considered a warranty or quality specification. All materials may present unknown hazards, and should be used with caution. Although certain hazards are described, we cannot guarantee that these are the only hazards which exist. PerkinElmer shall not be held liable for any damage resulting from handling or from contact with the product.

· **Department issuing SDS:** Environmental, Health and Safety
· **Contact:**
Within the USA: 1-(800)-762-4000
Outside the USA: 1-(203)-712-8488

(Contd. on page 11)

acc. to OSHA HCS

Printing date 08/10/2018 *Review date 08/10/2018*

Trade name: Internal Standard for Method 524.2

(Contd. of page 10)

· **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)
ICAO: International Civil Aviation Organisation
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
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
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
Flam. Liq. 2: Flammable liquids – Category 2
Acute Tox. 3: Acute toxicity – Category 3
STOT SE 1: Specific target organ toxicity (single exposure) – Category 1
· **** Data compared to the previous version altered.***

acc. to OSHA HCS

Printing date 08/10/2018 *Review date 08/10/2018*

1 Identification

· **Product identifier**

· **Trade name: Surrogate Standard for Method 524.2**
· **Article number** N9331051
· **Application of the substance / the mixture** Laboratory chemicals

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**

PerkinElmer, Inc.
710 Bridgeport Avenue
Shelton, Connecticut 06484 USA
CustomerCareUS@perkinelmer.com
203-925-4600
· **Emergency telephone number:**
CHEMTREC (within US) 800-424-9300
CHEMTREC (from outside US) +1 703-527-3887 (call collect)
CHEMTREC (within AU) +(61)-290372994

*

2 Hazard(s) identification

· **Classification of the substance or mixture**

Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.

Skull and crossbones

Acute Tox. 3 H331 Toxic if inhaled.

Health hazard

STOT SE 1 H370 Causes damage to organs.

· **Label elements**
· **GHS label elements**
The substance 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
· **Hazard statements**
H225 Highly flammable liquid and vapor.
H331 Toxic if inhaled.
H370 Causes damage to organs.
· **Precautionary statements**
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

(Contd. on page 2)

acc. to OSHA HCS

Printing date 08/10/2018 *Review date 08/10/2018*

Trade name: Surrogate Standard for Method 524.2

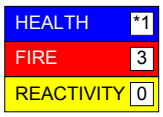
(Contd. of page 1)

P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting/equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
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.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353	If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P321	Specific treatment (see on this label).
P370+P378	In case of fire: Use for extinction: CO2, powder or water spray.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

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

Health = 1
Fire = 3
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



*Health = *1*
Fire = 3
Reactivity = 0

· **Other hazards**
The product does not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or formaldehydes.
· **Results of PBT and vPvB assessment**
· **PBT:** *Not applicable.*
· **vPvB:** *Not applicable.*

*
3 Composition/information on ingredients

· **Chemical characterization: Substances**
· **CAS No. Description**
67-56-1 methanol
· **Identification number(s)**
· **EC number:** *200-659-6*
· **Index number:** *603-001-00-X*
· **Chemical characterization: Mixtures**
· **Description:** *Mixture of the substances listed below with nonhazardous additions.*

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· **Hazardous components:**

67-56-1	methanol	Flam. Liq. 2, H225 Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331 STOT SE 1, H370	99.8%

· **Additional Components**

460-00-4	1-bromo-4-fluorobenzene	Flam. Liq. 3, H226 Skin Irrit. 2, H315; Eye Irrit. 2A, H319	0.1%
2199-69-1	1,2-Dichlorobenzene-d4		0.1%

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 eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:** Do not induce vomiting; immediately call for medical help.
· **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:**
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** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:** Mouth respiratory protective device.

*

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Prevent seepage into sewage system, workpits and cellars.
· **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 item 13.

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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:**		
67-56-1	methanol	530 ppm
460-00-4	1-bromo-4-fluorobenzene	12 mg/m³

· **PAC-2:**		
67-56-1	methanol	2,100 ppm
460-00-4	1-bromo-4-fluorobenzene	130 mg/m³

· **PAC-3:**		
67-56-1	methanol	7200* ppm
460-00-4	1-bromo-4-fluorobenzene	790 mg/m³

*
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 ignition sources away - Do not smoke.
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 item 7.

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**	
67-56-1 methanol	
PEL	Long-term value: 260 mg/m³, 200 ppm
REL	Short-term value: 325 mg/m³, 250 ppm Long-term value: 260 mg/m³, 200 ppm Skin

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TLV	*Short-term value: 328 mg/m³, 250 ppm* *Long-term value: 262 mg/m³, 200 ppm* *Skin; BEI*

· **Ingredients with biological limit values:**

67-56-1 methanol

BEI	*15 mg/L* *Medium: urine* *Time: end of shift* *Parameter: Methanol (background, nonspecific)*

· **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:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
· **Protection of hands:**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· **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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **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 or safety glasses

*

9 Physical and chemical properties

· **Information on basic physical and chemical properties**
· **General Information**
· **Appearance:**

Form:	*Liquid*
Color:	*Transparent*
· **Odor:**	*Characteristic*
· **Odor threshold:**	*Not determined.*

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· **pH-value:**	Not determined.
· **Change in condition**	
Melting point/Melting range:	-98 °C (-144.4 °F)
Boiling point/Boiling range:	64 °C (147.2 °F)
· **Flash point:**	< 23 °C (<73.4 °F)
· **Flammability (solid, gaseous):**	Not applicable.
· **Ignition temperature:**	455 °C (851 °F)
· **Decomposition temperature:**	Not determined.
· **Auto igniting:**	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):**	128 hPa (96 mm Hg)
· **Density at 20 °C (68 °F):**	0.79 g/cm³ (6.59255 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:	99.8 %
VOC content:	99.80 %
· **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.

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· **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:		
67-56-1 methanol		
Oral	LD50	5,628 mg/kg (rat)
Dermal	LD50	15,800 mg/kg (rabbit)

· **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:
Toxic

· **Carcinogenic categories**

· IARC (International Agency for Research on Cancer)
None of the ingredients is listed.

· 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:**
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:**
Dispose of container and materials in accordance with local, regional and national regulations.

· **Uncleaned packagings:**
· **Recommendation:** *Disposal must be made according to official regulations.*

*
14 Transport information

· **UN-Number**	
· **DOT, ADR, IMDG, IATA**	*UN1230*
· **UN proper shipping name**	
· **DOT**	*Methanol*
· **ADR**	*1230 Methanol*
· **IMDG, IATA**	*METHANOL*
· **Transport hazard class(es)**	
· **DOT**	

· **Class**	*3 Flammable liquids*
· **Label**	*3, 6.1*
· **ADR**	

· **Class**	*3 (FT1) Flammable liquids*
· **Label**	*3+6.1*
· **IMDG**	

· **Class**	*3 Flammable liquids*
· **Label**	*3/6.1*

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· **IATA**

· **Class**	*3 Flammable liquids*
· **Label**	*3 (6.1)*
· **Packing group**	
· **DOT, ADR, IMDG, IATA**	*II*
· **Environmental hazards:**	
· **Marine pollutant:**	*No*
· **Special precautions for user**	*Warning: Flammable liquids*
· **Danger code (Kemler):**	*336*
· **EMS Number:**	*F-E,S-D*
· **Stowage Category**	*B*
· **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*
· **ADR**	
· **Excepted quantities (EQ)**	*Code: E2* *Maximum net quantity per inner packaging: 30 ml* *Maximum net quantity per outer packaging: 500 ml*
· **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, 3 (6.1), II*

*

15 Regulatory information

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

67-56-1	*methanol* *Flam. Liq. 2, H225* *Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331* *STOT SE 1, H370*	*99.8%*
460-00-4	*1-bromo-4-fluorobenzene* *Flam. Liq. 3, H226* *Skin Irrit. 2, H315; Eye Irrit. 2A, H319*	*0.1%*

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2199-69-1	1,2-Dichlorobenzene-d4	0.1%

· **Sara**

· **Section 355 (extremely hazardous substances):**
None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

67-56-1	methanol

· **TSCA (Toxic Substances Control Act):**
All ingredients are listed.

67-56-1	methanol
460-00-4	1-bromo-4-fluorobenzene

· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients is listed.

· **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

· **Cancerogenity categories**

· **EPA (Environmental Protection Agency)**
None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**
None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

· **National regulations:**

· **Information about limitation of use:**
Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.

· **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

*
16 Other information

Disclaimer
The information provided in this Material Safety Data Sheet is based on our present knowledge, and believed to be correct at the date of publication. However, no representation is made concerning its accuracy and completeness. It is intended as guidance only, and is not to be considered a warranty or quality specification. All materials may present unknown hazards, and should be used with caution. Although certain hazards are described, we cannot guarantee that these are the only hazards which exist. PerkinElmer shall not be held

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liable for any damage resulting from handling or from contact with the product.

· **Department issuing SDS:** *Environmental, Health and Safety*
· **Contact:**
Within the USA: 1-(800)-762-4000
Outside the USA: 1-(203)-712-8488
· **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)
ICAO: International Civil Aviation Organisation
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
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
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
Flam. Liq. 2: Flammable liquids – Category 2
Acute Tox. 3: Acute toxicity – Category 3
STOT SE 1: Specific target organ toxicity (single exposure) – Category 1
· **** Data compared to the previous version altered.***

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1 Identification

· **Product identifier**

· **Trade name: Fortification Solution for Method 524.2**
· **Article number** N9331052
· **Application of the substance / the mixture** Laboratory chemicals

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**

PerkinElmer, Inc.
710 Bridgeport Avenue
Shelton, Connecticut 06484 USA
CustomerCareUS@perkinelmer.com
203-925-4600
· **Emergency telephone number:**
CHEMTREC (within US) 800-424-9300
CHEMTREC (from outside US) +1 703-527-3887 (call collect)
CHEMTREC (within AU) +(61)-290372994

*

2 Hazard(s) identification

· **Classification of the substance or mixture**

Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.

Skull and crossbones

Acute Tox. 3 H331 Toxic if inhaled.

Health hazard

STOT SE 1 H370 Causes damage to organs.

· **Label elements**
· **GHS label elements**
The substance 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
· **Hazard statements**
H225 Highly flammable liquid and vapor.
H331 Toxic if inhaled.
H370 Causes damage to organs.
· **Precautionary statements**
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

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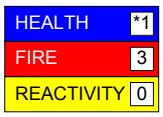
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting/equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353	If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P321	Specific treatment (see on this label).
P370+P378	In case of fire: Use for extinction: CO2, powder or water spray.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

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

Health = 1
Fire = 3
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



*Health = *1*
Fire = 3
Reactivity = 0

· **Other hazards**
The product does not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or formaldehydes.
· **Results of PBT and vPvB assessment**
· **PBT:** *Not applicable.*
· **vPvB:** *Not applicable.*

*
3 Composition/information on ingredients

· **Chemical characterization: Substances**
· **CAS No. Description**
67-56-1 Methyl Alcohol
· **Identification number(s)**
· **EC number:** *200-659-6*
· **Index number:** *603-001-00-X*
· **Chemical characterization: Mixtures**
· **Description:** *Mixture of the substances listed below with nonhazardous additions.*

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· **Hazardous components:**

67-56-1	methanol	Flam. Liq. 2, H225 Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331 STOT SE 1, H370	99.7%

· **Additional Components**

460-00-4	1-bromo-4-fluorobenzene	Flam. Liq. 3, H226 Skin Irrit. 2, H315; Eye Irrit. 2A, H319	0.1%
462-06-6	fluorobenzene	Flam. Liq. 2, H225	0.1%
2199-69-1	1,2-Dichlorobenzene-d4		0.1%

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 eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:** Do not induce vomiting; immediately call for medical help.
· **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:**
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:** Mouth respiratory protective device.

*

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Prevent seepage into sewage system, workpits and cellars.
Dilute with plenty of water.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

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Trade name: Fortification Solution for Method 524.2

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Dispose contaminated material as waste according to item 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:**		
67-56-1	methanol	530 ppm
460-00-4	1-bromo-4-fluorobenzene	12 mg/m³
462-06-6	fluorobenzene	30 mg/m³

· **PAC-2:**		
67-56-1	methanol	2,100 ppm
460-00-4	1-bromo-4-fluorobenzene	130 mg/m³
462-06-6	fluorobenzene	330 mg/m³

· **PAC-3:**		
67-56-1	methanol	7200* ppm
460-00-4	1-bromo-4-fluorobenzene	790 mg/m³
462-06-6	fluorobenzene	1,200 mg/m³

*
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 ignition sources away - Do not smoke.
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 item 7.*

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Trade name: Fortification Solution for Method 524.2

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· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**	
67-56-1 methanol	
PEL	Long-term value: 260 mg/m³, 200 ppm
REL	Short-term value: 325 mg/m³, 250 ppm Long-term value: 260 mg/m³, 200 ppm Skin
TLV	Short-term value: 328 mg/m³, 250 ppm Long-term value: 262 mg/m³, 200 ppm Skin; BEI

· **Ingredients with biological limit values:**	
67-56-1 methanol	
BEI	15 mg/L Medium: urine Time: end of shift Parameter: Methanol (background, nonspecific)

· **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:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
· **Protection of hands:**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· **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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **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 or safety glasses

· **Body protection:** Apron

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9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Liquid
Color:	Transparent
· **Odor:**	Characteristic
· **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 °C (147.2 °F)
· **Flash point:**	< 23 °C (<73.4 °F)
· **Flammability (solid, gaseous):**	Not applicable.
· **Ignition temperature:**	455 °C (851 °F)
· **Decomposition temperature:**	Not determined.
· **Auto igniting:**	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):**	128 hPa (96 mm Hg)
· **Density at 20 °C (68 °F):**	0.79 g/cm³ (6.59255 lbs/gal)
· **Relative density**	Not determined.
· **Vapor density**	Not determined.
· **Evaporation rate**	Not determined.
· **Solubility in / Miscibility with**	
Water:	Fully miscible.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not determined.
Kinematic:	Not determined.
· **Solvent content:**	
Organic solvents:	99.7 %
VOC content:	99.70 %
· **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.

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11 Toxicological information

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

· **LD/LC50 values that are relevant for classification:**		
67-56-1 methanol		
Oral	LD50	5,628 mg/kg (rat)
Dermal	LD50	15,800 mg/kg (rabbit)

· **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:
Toxic

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**
None of the ingredients is listed.

· **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:**
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

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· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Dispose of container and materials in accordance with local, regional and national regulations.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.
· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

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14 Transport information

· **UN-Number**	
· **DOT, ADR, IMDG, IATA**	UN1230
· **UN proper shipping name**	
· **DOT**	Methanol
· **ADR**	1230 Methanol
· **IMDG, IATA**	METHANOL
· **Transport hazard class(es)**	
· **DOT**	

· **Class**	3 Flammable liquids
· **Label**	3, 6.1
· **ADR**	

· **Class**	3 (FT1) Flammable liquids
· **Label**	3+6.1
· **IMDG**	

· **Class**	3 Flammable liquids

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· **Label**	3/6.1
· **IATA**	
	
· **Class**	3 Flammable liquids
· **Label**	3 (6.1)
· **Packing group**	
· **DOT, ADR, IMDG, IATA**	II
· **Environmental hazards:**	
· **Marine pollutant:**	No
· **Special precautions for user**	Warning: Flammable liquids
· **Danger code (Kemler):**	336
· **EMS Number:**	F-E,S-D
· **Stowage Category**	B
· **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
· **ADR**	
· **Excepted quantities (EQ)**	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· **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, 3 (6.1), II

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15 Regulatory information

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

67-56-1	methanol Flam. Liq. 2, H225 Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331 STOT SE 1, H370	99.7%

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460-00-4	1-bromo-4-fluorobenzene Flam. Liq. 3, H226 Skin Irrit. 2, H315; Eye Irrit. 2A, H319	0.1%
462-06-6	fluorobenzene Flam. Liq. 2, H225	0.1%

· **Sara**

· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

67-56-1	methanol

· **TSCA (Toxic Substances Control Act):**
All ingredients are listed.

67-56-1	methanol
460-00-4	1-bromo-4-fluorobenzene
462-06-6	fluorobenzene

· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **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

· **Cancerogenity categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients is listed.

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

None of the ingredients is listed.

· **National regulations:**

· **Information about limitation of use:**
Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.

· **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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16 Other information

Disclaimer
The information provided in this Material Safety Data Sheet is based on our present knowledge,

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and believed to be correct at the date of publication. However, no representation is made concerning its accuracy and completeness. It is intended as guidance only, and is not to be considered a warranty or quality specification. All materials may present unknown hazards, and should be used with caution. Although certain hazards are described, we cannot guarantee that these are the only hazards which exist. PerkinElmer shall not be held liable for any damage resulting from handling or from contact with the product.

· **Department issuing SDS:** *Environmental, Health and Safety*
· **Contact:**
Within the USA: 1-(800)-762-4000
Outside the USA: 1-(203)-712-8488
· **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)
ICAO: International Civil Aviation Organisation
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
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
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
Flam. Liq. 2: Flammable liquids – Category 2
Acute Tox. 3: Acute toxicity – Category 3
STOT SE 1: Specific target organ toxicity (single exposure) – Category 1
· **** Data compared to the previous version altered.***