

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/20/2019

Reviewed on 02/20/2019

1 Identification

- **Product identifier**
- **Product Name:** Mix A for GC/PID
- **Part Number:** 8020-A
- **Application of the substance / the mixture** Certified Reference Material
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
SPEX CertiPrep, LLC.
203 Norcross Ave, Metuchen,
NJ 08840 USA
- **Information department:** product safety department
- **Emergency telephone number:**
Emergency Phone Number (24 hours)
CHEMTREC (800-424-9300)
Outside US: 703-527-3887

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

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



GHS06 Skull and crossbones

Acute Tox. 3 H331 Toxic if inhaled.



GHS08 Health hazard

Muta. 1B H340 May cause genetic defects.

Carc. 1A H350 May cause cancer.

Repr. 2 H361d Suspected of damaging the unborn child.

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
benzene

- **Hazard statements**

H225 Highly flammable liquid and vapor.

H331 Toxic if inhaled.

H340 May cause genetic defects.

H350 May cause cancer.

H361d Suspected of damaging the unborn child.

H370 Causes damage to organs.

- **Precautionary statements**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Use explosion-proof electrical/ventilating/lighting/equipment.

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

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

Store locked up.

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

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/20/2019

Reviewed on 02/20/2019

Product Name: Mix A for GC/PID

(Contd. of page 1)

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



- HMIS-ratings (scale 0 - 4)

HEALTH	1	Health = *1
FIRE	3	Fire = 3
REACTIVITY	0	Reactivity = 0

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

3 Composition/information on ingredients

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

· Dangerous components:

67-56-1	methanol	98.0%
106-46-7	1,4-dichlorobenzene	0.2%
71-43-2	benzene	0.2%
108-88-3	toluene	0.2%
100-41-4	ethylbenzene	0.2%

· Chemical identification of the substance/preparation

541-73-1	1,3-dichlorobenzene	0.2%
95-50-1	1,2-dichlorobenzene	0.2%
95-47-6	o-xylene	0.2%
108-90-7	chlorobenzene	0.2%
106-42-3	p-xylene	0.2%
108-38-3	m-xylene	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 give anything to eat or drink - Do not induce vomiting
- Information for Doctor:
 - Most important symptoms and effects, both acute and delayed No further relevant information available.
 - Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

- Extinguishing media
- Suitable extinguishing agents: CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- For safety reasons unsuitable extinguishing agents: Water with full jet
- Special hazards arising from the substance or mixture During heating or in case of fire poisonous gases are produced.

(Contd. on page 3)

US

Product Name: Mix A for GC/PID

(Contd. of page 2)

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

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Mount respiratory protective device.
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to 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
541-73-1	1,3-dichlorobenzene	6 ppm
95-50-1	1,2-dichlorobenzene	50 ppm
106-46-7	1,4-dichlorobenzene	30 ppm
71-43-2	benzene	52 ppm
108-90-7	chlorobenzene	10 ppm
108-88-3	toluene	67 ppm
100-41-4	ethylbenzene	33 ppm
108-38-3	m-xylene	130 ppm

· PAC-2:

67-56-1	methanol	2,100 ppm
541-73-1	1,3-dichlorobenzene	66 ppm
95-50-1	1,2-dichlorobenzene	170 ppm
106-46-7	1,4-dichlorobenzene	170 ppm
71-43-2	benzene	800 ppm
108-90-7	chlorobenzene	150 ppm
108-88-3	toluene	560 ppm
100-41-4	ethylbenzene	1100* ppm
108-38-3	m-xylene	920 ppm

· PAC-3:

67-56-1	methanol	7200* ppm
541-73-1	1,3-dichlorobenzene	400 ppm
95-50-1	1,2-dichlorobenzene	1,000 ppm
106-46-7	1,4-dichlorobenzene	1,000 ppm
71-43-2	benzene	4000* ppm
108-90-7	chlorobenzene	400 ppm
108-88-3	toluene	3700* ppm
100-41-4	ethylbenzene	1800* ppm
108-38-3	m-xylene	2500* ppm

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/20/2019

Reviewed on 02/20/2019

Product Name: Mix A for GC/PID

(Contd. of page 3)

- **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/m ³ , 200 ppm
REL	Short-term value: 325 mg/m ³ , 250 ppm Long-term value: 260 mg/m ³ , 200 ppm Skin
TLV	Short-term value: 328 mg/m ³ , 250 ppm Long-term value: 262 mg/m ³ , 200 ppm Skin; BEI

106-46-7 1,4-dichlorobenzene

PEL	Long-term value: 450 mg/m ³ , 75 ppm
REL	See Pocket Guide App. A
TLV	Long-term value: 60 mg/m ³ , 10 ppm

71-43-2 benzene

PEL	Short-term value: 15* mg/m ³ , 5* ppm Long-term value: 3* mg/m ³ , 1* ppm *table Z-2 for exclusions in 29CFR1910.1028(d)
REL	Short-term value: 1 ppm Long-term value: 0.1 ppm See Pocket Guide App. A
TLV	Short-term value: 8 mg/m ³ , 2.5 ppm Long-term value: 1.6 mg/m ³ , 0.5 ppm Skin; BEI

108-88-3 toluene

PEL	Long-term value: 200 ppm Ceiling limit value: 300; 500* ppm *10-min peak per 8-hr shift
REL	Short-term value: 560 mg/m ³ , 150 ppm Long-term value: 375 mg/m ³ , 100 ppm
TLV	Long-term value: 75 mg/m ³ , 20 ppm BEI

100-41-4 ethylbenzene

PEL	Long-term value: 435 mg/m ³ , 100 ppm
REL	Short-term value: 545 mg/m ³ , 125 ppm Long-term value: 435 mg/m ³ , 100 ppm
TLV	Long-term value: 87 mg/m ³ , 20 ppm BEI

· **Ingredients with biological limit values:**

67-56-1 methanol

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

(Contd. on page 5)

Product Name: Mix A for GC/PID

(Contd. of page 4)

71-43-2 benzene

BEI 25 µg/g creatinine
Medium: urine
Time: end of shift
Parameter: S-Phenylmercapturic acid (background)

500 µg/g creatinine
Medium: urine
Time: end of shift
Parameter: t,t-Muconic acid (background)

108-88-3 toluene

BEI 0.02 mg/L
Medium: blood
Time: prior to last shift of workweek
Parameter: Toluene

0.03 mg/L
Medium: urine
Time: end of shift
Parameter: Toluene

0.3 mg/g creatinine
Medium: urine
Time: end of shift
Parameter: o-Cresol with hydrolysis (background)

100-41-4 ethylbenzene

BEI 0.7 g/g creatinine
Medium: urine
Time: end of shift at end of workweek
Parameter: Sum of mandelic acid and phenylglyoxylic acid (nonspecific, semi-quantitative)

-
Medium: end-exhaled air
Time: not critical
Parameter: Ethyl benzene (semi-quantitative)

· **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.

· **Respiratory protection:**

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.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

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 through time has to be found out by the manufacturer of the protective gloves and has to be observed.

(Contd. on page 6)

Product Name: Mix A for GC/PID

(Contd. of page 5)

· Eye protection:



Tightly sealed goggles

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Appearance:

Form:	Liquid
Color:	According to product specification
Odor:	Characteristic
Odour Threshold:	Not applicable.

· pH-value: Not applicable.

· Change in condition

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	64.7 °C (148.5 °F)

· Flash point: < 23 °C (<73.4 °F)

· Flammability (solid, gaseous): Not applicable.

· Ignition temperature: 455 °C (851 °F)

· Decomposition temperature: Not applicable.

· 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) 0.79499 g/cm³ (6.63419 lbs/gal)

· Relative density Not applicable.

· Vapor density Not applicable.

· Evaporation rate Not applicable.

· Solubility in / Miscibility with

Water: Not miscible or difficult to mix.

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

· Viscosity:

Dynamic:	Not applicable.
Kinematic:	Not applicable.

· Solvent content:

Organic solvents:	99.4 %
VOC content:	99.40 %

Solids content: 0.2 %

· 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.

US
(Contd. on page 7)

Product Name: Mix A for GC/PID

(Contd. of page 6)

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)

95-50-1 1,2-dichlorobenzene

Oral	LD50	500 mg/kg (rat)
------	------	-----------------

106-46-7 1,4-dichlorobenzene

Oral	LD50	500 mg/kg (rat)
------	------	-----------------

71-43-2 benzene

Oral	LD50	4,894 mg/kg (rat)
Dermal	LD50	48 mg/kg (mouse)
Inhalative	LC50/4 h	9,980 mg/l (mouse)

- Primary 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

Product is suspected to cause damage to fertility.

Product is suspected to cause birth defects.

The product can cause inheritable damage.

- Carcinogenic categories

- IARC (International Agency for Research on Cancer)

541-73-1	1,3-dichlorobenzene	3
95-50-1	1,2-dichlorobenzene	3
106-46-7	1,4-dichlorobenzene	2B
71-43-2	benzene	1
95-47-6	o-xylene	3
106-42-3	p-xylene	3
108-88-3	toluene	3
100-41-4	ethylbenzene	2B
108-38-3	m-xylene	3

- NTP (National Toxicology Program)

106-46-7	1,4-dichlorobenzene	R
71-43-2	benzene	K

- OSHA-Ca (Occupational Safety & Health Administration)

71-43-2	benzene	
---------	---------	--

12 Ecological information

- Toxicity

· Aquatic toxicity: No further relevant information available.

· Persistence and degradability: No further relevant information available.

- Behavior in environmental systems:

· Bioaccumulative potential: No further relevant information available.

· Mobility in soil: No further relevant information available.

- Additional ecological information:

- General notes:

Water hazard class 3 (Self-assessment): extremely hazardous for water

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

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

- Results of PBT and vPvB assessment

· PBT: Not applicable.

· vPvB: Not applicable.

(Contd. on page 8)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/20/2019

Reviewed on 02/20/2019





Product Name: Mix A for GC/PID

(Contd. of page 7)

· *Other adverse effects* No further relevant information available.**13 Disposal considerations**

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

14 Transport information

· <i>UN-Number</i> · <i>DOT, ADR, IMDG, IATA</i>	UN1230
· <i>UN proper shipping name</i> · <i>DOT</i> · <i>ADR</i> · <i>IMDG, IATA</i>	Methanol 1230 METHANOL METHANOL
· <i>Transport hazard class(es)</i> · <i>DOT</i>	
	
· <i>Class</i> · <i>Label</i>	3 Flammable liquids 3, 6.1
· <i>ADR</i>	
	
· <i>Class</i> · <i>Label</i>	3 Flammable liquids 3+6.1
· <i>IMDG</i>	
	
· <i>Class</i> · <i>Label</i>	3 Flammable liquids 3/6.1
· <i>IATA</i>	
	
· <i>Class</i> · <i>Label</i>	3 Flammable liquids 3 (6.1)
· <i>Packing group</i> · <i>DOT, ADR, IMDG, IATA</i>	II
· <i>Environmental hazards:</i>	Not applicable.
· <i>Special precautions for user</i> · <i>Danger code (Kemler):</i> · <i>EMS Number:</i> · <i>Stowage Category</i> · <i>Stowage Code</i>	Warning: Flammable liquids 336 F-E,S-D B SW2 Clear of living quarters.

(Contd. on page 9)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/20/2019

Reviewed on 02/20/2019

Product Name: Mix A for GC/PID

(Contd. of page 8)

· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· 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
- Sara

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

All ingredients are listed.

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

All ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

106-46-7	1,4-dichlorobenzene
71-43-2	benzene
100-41-4	ethylbenzene

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

None of the ingredients is listed.

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

71-43-2	benzene
---------	---------

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

67-56-1	methanol
71-43-2	benzene
108-88-3	toluene

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

541-73-1	1,3-dichlorobenzene	D
95-50-1	1,2-dichlorobenzene	D
71-43-2	benzene	A, K/L
95-47-6	o-xylene	I
108-90-7	chlorobenzene	D
106-42-3	p-xylene	I
108-88-3	toluene	II
100-41-4	ethylbenzene	D
108-38-3	m-xylene	I

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

95-50-1	1,2-dichlorobenzene	A4
106-46-7	1,4-dichlorobenzene	A3
71-43-2	benzene	A1
95-47-6	o-xylene	A4
108-90-7	chlorobenzene	A3
106-42-3	p-xylene	A4
108-88-3	toluene	A4
100-41-4	ethylbenzene	A3

(Contd. on page 10)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/20/2019

Reviewed on 02/20/2019

Product Name: Mix A for GC/PID

(Contd. of page 9)

108-38-3	m-xylene	A4
· NIOSH-Ca (National Institute for Occupational Safety and Health)		
106-46-7	1,4-dichlorobenzene	
71-43-2	benzene	

· **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

benzene

· **Hazard statements**

H225 Highly flammable liquid and vapor.

H331 Toxic if inhaled.

H340 May cause genetic defects.

H350 May cause cancer.

H361d Suspected of damaging the unborn child.

H370 Causes damage to organs.

· **Precautionary statements**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Use explosion-proof electrical/ventilating/lighting/equipment.

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

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

Store locked up.

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

· **National regulations:**

· **Information about limitation of use:**

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

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

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** product safety department

· **Contact:**

SPEX CertiPrep, LLC.

1-732-549-7144

· **Date of preparation / last revision** 02/20/2019 / -

· **Abbreviations and acronyms:**

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

BEL: Biological Exposure Limit

Flam. Liq. 2: Flammable liquids – Category 2

Acute Tox. 3: Acute toxicity – Category 3

Muta. 1B: Germ cell mutagenicity – Category 1B

Carc. 1A: Carcinogenicity – Category 1A

Repr. 2: Reproductive toxicity – Category 2

STOT SE 1: Specific target organ toxicity (single exposure) – Category 1