

**Safety Data Sheet**  
acc. to OSHA HCS

Printing date 01/15/2019

Reviewed on 01/15/2019

## 1 Identification

- **Product identifier**
- **Product Name:** Free Acids Analyte Mix
- **Part Number:** 5522-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.



GHS07

Acute Tox. 4 H312 Harmful in contact with skin.

Skin Irrit. 2 H315 Causes skin irritation.

- **Label elements**

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

- **Hazard pictograms**



GHS02



GHS07

- **Signal word** Danger

- **Hazard-determining components of labeling:**

Methyl-tert-butyl ether

- **Hazard statements**

H225 Highly flammable liquid and vapor.

H312 Harmful in contact with skin.

H315 Causes skin irritation.

- **Precautionary statements**

If medical advice is needed, have product container or label at hand.

Keep out of reach of children.

Read label before use.

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

Ground/bond container and receiving equipment.

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

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

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

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	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:**

1634-04-4	Methyl-tert-butyl ether	99.38%
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**· Chemical identification of the substance/preparation**

75-96-7	tribromoacetic acid	0.2%
5278-95-5	Chlorodibromoacetic acid	0.1%
79-11-8	chloroacetic acid	0.06%
79-43-6	dichloroacetic acid	0.06%
75-99-0	2,2-dichloropropionic acid	0.04%
5589-96-8	Bromochloroacetic acid	0.04%
79-08-3	bromoacetic acid	0.04%
71133-14-7	Bromodichloroacetic acid	0.04%
76-03-9	trichloroacetic acid	0.02%
631-64-1	dibromoacetic acid	0.02%

**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.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Immediately rinse with water.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **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:** CO<sub>2</sub>, 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:** No special measures required.

**6 Accidental release measures**

- **Personal precautions, protective equipment and emergency procedures** Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.
- **Reference to other sections**  
See Section 7 for information on safe handling.

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See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

· **Protective Action Criteria for Chemicals**

· **PAC-1:**

1634-04-4	Methyl-tert-butyl ether	50 ppm
79-11-8	chloroacetic acid	1.5 ppm
79-43-6	dichloroacetic acid	1.5 ppm
79-08-3	bromoacetic acid	0.023 mg/m <sup>3</sup>
76-03-9	trichloroacetic acid	1.5 ppm

· **PAC-2:**

1634-04-4	Methyl-tert-butyl ether	570 ppm
79-11-8	chloroacetic acid	6.6 ppm
79-43-6	dichloroacetic acid	8.9 ppm
79-08-3	bromoacetic acid	0.26 mg/m <sup>3</sup>
76-03-9	trichloroacetic acid	16 ppm

· **PAC-3:**

1634-04-4	Methyl-tert-butyl ether	5300* ppm
79-11-8	chloroacetic acid	15 ppm
79-43-6	dichloroacetic acid	140 ppm
79-08-3	bromoacetic acid	1.5 mg/m <sup>3</sup>
76-03-9	trichloroacetic acid	99 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:**

1634-04-4	Methyl-tert-butyl ether
TLV	Long-term value: 180 mg/m <sup>3</sup> , 50 ppm

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

· **Respiratory protection:** Not required.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

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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.

· **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: 55.2 °C (131.4 °F)

· **Flash point:** < 0 °C (<32 °F)

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:** 460 °C (860 °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: 1.6 Vol %  
Upper: 8.4 Vol %

· **Vapor pressure at 20 °C (68 °F):** 268 hPa (201 mm Hg)

· **Density** Not applicable.

· **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: 99.38 %

Solids content: 0.3 %

· **Other information** No further relevant information available.

### 10 Stability and reactivity

· **Reactivity** No further relevant information available.

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

### 11 Toxicological information

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

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

#### 1634-04-4 Methyl-tert-butyl ether

Oral	LD50	4,000 mg/kg (rat)
Dermal	LD50	1,000 mg/kg (rabbit)
Inhalative	LC50/4 h	142 mg/l (rat)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **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:  
Harmful  
Irritant

- **Carcinogenic categories**

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

1634-04-4	Methyl-tert-butyl ether	3
79-43-6	dichloroacetic acid	2B
5589-96-8	Bromochloroacetic acid	2B
76-03-9	trichloroacetic acid	2B
631-64-1	dibromoacetic acid	2B

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

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

None of the ingredients is listed.

### 12 Ecological information

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

### 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

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

**14 Transport information**

· <b>UN-Number</b> · <b>DOT, ADR, IMDG, IATA</b>	UN2398
· <b>UN proper shipping name</b> · <b>DOT</b> · <b>ADR</b> · <b>IMDG, IATA</b>	Methyl tert-butyl ether 2398 Methyl tert-butyl ether METHYL tert-BUTYL ETHER
· <b>Transport hazard class(es)</b> · <b>DOT</b>	
	
· <b>Class</b> · <b>Label</b>	3 Flammable liquids 3
· <b>ADR, IMDG, IATA</b>	
	
· <b>Class</b> · <b>Label</b>	3 Flammable liquids 3
· <b>Packing group</b> · <b>DOT, ADR, IMDG, IATA</b>	II
· <b>Environmental hazards:</b>	Not applicable.
· <b>Special precautions for user</b> · <b>Danger code (Kemler):</b> · <b>EMS Number:</b> · <b>Stowage Category</b>	Warning: Flammable liquids 33 F-E,S-D E
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b>	
· <b>ADR</b> · <b>Excepted quantities (EQ)</b>	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· <b>IMDG</b> · <b>Limited quantities (LQ)</b> · <b>Excepted quantities (EQ)</b>	1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· <b>UN "Model Regulation":</b>	UN 2398 METHYL TERT-BUTYL ETHER, 3, II

**15 Regulatory information**

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

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

1634-04-4	Methyl-tert-butyl ether
79-11-8	chloroacetic acid

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

1634-04-4	Methyl-tert-butyl ether
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75-96-7	tribromoacetic acid
79-11-8	chloroacetic acid
79-43-6	dichloroacetic acid
75-99-0	2,2-dichloropropionic acid
79-08-3	bromoacetic acid
76-03-9	trichloroacetic acid
631-64-1	dibromoacetic acid

· **Proposition 65**· **Chemicals known to cause cancer:**

79-43-6	dichloroacetic acid
5589-96-8	Bromochloroacetic acid
71133-14-7	Bromodichloroacetic acid
76-03-9	trichloroacetic acid
631-64-1	dibromoacetic acid

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

None of the ingredients is listed.

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

79-43-6	dichloroacetic acid
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· **Chemicals known to cause developmental toxicity:**

79-43-6	dichloroacetic acid
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· **Carcinogenic categories**· **EPA (Environmental Protection Agency)**

79-43-6	dichloroacetic acid	L
76-03-9	trichloroacetic acid	SC

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

1634-04-4	Methyl-tert-butyl ether	A3
79-11-8	chloroacetic acid	A4
79-43-6	dichloroacetic acid	A3
75-99-0	2,2-dichloropropionic acid	A4
76-03-9	trichloroacetic acid	A3

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

None of the ingredients is listed.

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

GHS02

GHS07

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

Methyl-tert-butyl ether

· **Hazard statements**

H225 Highly flammable liquid and vapor.

H312 Harmful in contact with skin.

H315 Causes skin irritation.

· **Precautionary statements**

If medical advice is needed, have product container or label at hand.

Keep out of reach of children.

Read label before use.

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

Ground/bond container and receiving equipment.

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

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

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

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

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· **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** 01/15/2019 / -

· **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)

LCS0: 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

Flam. Liq. 2: Flammable liquids – Category 2

Acute Tox. 4: Acute toxicity – Category 4

Skin Irrit. 2: Skin corrosion/irritation – Category 2

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