

# Safety Data Sheet acc. to OSHA HCS

Printing date 11/30/2018

Reviewed on 11/30/2018

## 1 Identification

- **Product identifier**
- **Product Name:** 2,4,5-Trichlorophenoxyacetic acid
- **Part Number:** S-3655
- **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.



GHS08 Health hazard

Carc. 2 H351 Suspected of causing cancer.



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



GHS08

- **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.

H351 Suspected of causing cancer.

- **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.

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.

Store locked up.

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

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Product Name: 2,4,5-Trichlorophenoxyacetic acid

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



Health = 1  
Fire = 3  
Reactivity = 0

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



Health = 1  
Fire = 3  
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 | 99.9% |
| 93-76-5   | 2,4,5-T (ISO)           | 0.1%  |

### 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.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

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### · Protective Action Criteria for Chemicals

#### · PAC-1:

|           |                         |                      |
|-----------|-------------------------|----------------------|
| 1634-04-4 | Methyl-tert-butyl ether | 50 ppm               |
| 93-76-5   | 2,4,5-T (ISO)           | 30 mg/m <sup>3</sup> |

#### · PAC-2:

|           |                         |                      |
|-----------|-------------------------|----------------------|
| 1634-04-4 | Methyl-tert-butyl ether | 570 ppm              |
| 93-76-5   | 2,4,5-T (ISO)           | 42 mg/m <sup>3</sup> |

#### · PAC-3:

|           |                         |                       |
|-----------|-------------------------|-----------------------|
| 1634-04-4 | Methyl-tert-butyl ether | 5300* ppm             |
| 93-76-5   | 2,4,5-T (ISO)           | 250 mg/m <sup>3</sup> |

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** 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:**  
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.  
At this time, the remaining constituent has no known exposure limits.

#### 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:**  
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.  
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.  
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.

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**Product Name: 2,4,5-Trichlorophenoxyacetic acid**

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· **Eye protection:**



Tightly sealed goggles

## 9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

|                  |                                    |
|------------------|------------------------------------|
| Form:            | 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 at 20 °C (68 °F)** 0.78921 g/cm<sup>3</sup> (6.58596 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: | 99.9 %  |
| VOC content:      | 99.90 % |

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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Product Name: 2,4,5-Trichlorophenoxyacetic acid

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### 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  |
| 93-76-5   | 2,4,5-T (ISO)           | 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.

#### · Uncleaned packagings:

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

### 14 Transport information

#### · UN-Number

#### · DOT, ADR, IMDG, IATA

UN2398

#### · UN proper shipping name

#### · DOT

Methyl tert-butyl ether

#### · ADR

2398 Methyl tert-butyl ether

#### · IMDG, IATA

METHYL tert-BUTYL ETHER

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Product Name: 2,4,5-Trichlorophenoxyacetic acid

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## · Transport hazard class(es)

## · DOT



## · Class

3 Flammable liquids

## · Label

3

## · ADR, IMDG, IATA



## · Class

3 Flammable liquids

## · Label

3

## · Packing group

## · DOT, ADR, IMDG, IATA

II

## · Environmental hazards:

Not applicable.

## · Special precautions for user

Warning: Flammable liquids

## · Danger code (Kemler):

33

## · EMS Number:

F-E,S-D

## · Stowage Category

E

## · 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 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

## · TSCA (Toxic Substances Control Act):

All ingredients are listed.

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

93-76-5 2,4,5-T (ISO)

## · 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:

None of the ingredients is listed.

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**Product Name: 2,4,5-Trichlorophenoxyacetic acid**

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**· Carcinogenic categories**
**· EPA (Environmental Protection Agency)**

None of the ingredients is listed.

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

|           |                         |    |
|-----------|-------------------------|----|
| 1634-04-4 | Methyl-tert-butyl ether | A3 |
| 93-76-5   | 2,4,5-T (ISO)           | A4 |

**· 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**

**· 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.

H351 Suspected of causing cancer.

**· 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.

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.

Store locked up.

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

**· 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** 11/30/2018 / -

**· 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 &amp; 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

Carc. 2: Carcinogenicity – Category 2