

Safety Data Sheet
according to OSHA HCS

Printing date 07/19/2021

Reviewed on 07/19/2021

1 Identification

- **Product name**
- **Trade name:** CALLERY™ Potassium tert-butoxide, 20% solution in tetrahydrofuran
- **Item number:** 19-1000
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Strem Chemicals, Inc.
7 Mulliken Way
NEWBURYPORT, MA 01950
USA
info@strem.com
- **Information department:** Technical Department
- **Emergency telephone number:**
EMERGENCY: CHEMTREC: + 1 (800) 424-9300
During normal opening times: +1 (978) 499-1600

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

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



GHS08 Health hazard

Repr. 2 H361 Suspected of damaging fertility or the unborn child.
STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.
Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.



GHS05 Corrosion

Skin Corr. 1A H314 Causes severe skin burns and eye damage.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.
STOT SE 3 H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.

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



GHS02 GHS05 GHS07 GHS08

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· **Signal word** *Danger*

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

*Potassium 2-methyl-butan-2-olate
toluene*

· **Hazard statements**

*H225 Highly flammable liquid and vapor.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H361 Suspected of damaging fertility or the unborn child.
H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.
H373 May cause damage to organs through prolonged or repeated exposure.
H304 May be fatal if swallowed and enters airways.*

· **Precautionary statements**

*P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.*

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



· **HMIS-ratings (scale 0 - 4)**



· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

108-88-3	toluene	75.0%
41233-93-6	Potassium 2-methyl-butan-2-olate	25.0%

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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.
- **After inhalation:** 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:**
Immediately call a doctor.
Drink copious amounts of water and provide fresh air. Immediately call a doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **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:** 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).
Use neutralizing agent.
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:**

108-88-3	toluene	67 ppm
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· **PAC-2:**

108-88-3	toluene	560 ppm
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· **PAC-3:**

108-88-3 toluene

3700* 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:**
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.

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

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· Ingredients with biological limit values:

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)

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

· Exposure controls

· Personal protective equipment: Wear protective clothing

· 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.

· Breathing equipment: A NIOSH approved respirator in accordance with 29 CFR 1910.134.

· 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.

· Eye protection:



Tightly sealed goggles

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9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

· Form:	Liquid
· Color:	Various colors
· Odor:	Characteristic
· Odor threshold:	Not determined.

· **pH-value:** Not determined.

· **Change in condition**

· Melting point/Melting range:	Undetermined.
· Boiling point/Boiling range:	110.6 °C (231 °F)

· **Flash point:** 4.4 °C (40 °F)

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

· **Ignition temperature:** 535 °C (995 °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:	1.2 Vol %
· Upper:	7.0 Vol %

· **Vapor pressure at 20 °C (68 °F):** 29 hPa (22 mm Hg)

· **Density:** Not determined.

· **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:	75.0 %
· VOC content:	75.0 %
	750.0 g/l / 6.26 lb/gl

· **Solids content:** 25.0 %

· **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:**

108-88-3 toluene

Oral	LD50	5000 mg/kg (rat)
Dermal	LD50	12124 mg/kg (rabbit)
Inhalative	LC50/4 h	5320 mg/l (mouse)

· **Primary irritant effect:**

· **on the skin:** Strong caustic effect on skin and mucous membranes.

· **on the eye:** Strong caustic effect.

· **Sensitization:** No sensitizing effects known.

· **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Harmful

Corrosive

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

· **Carcinogenic categories**

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

108-88-3	toluene	3
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· **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 2 (Self-assessment): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Must not reach bodies of water or drainage ditch undiluted or unneutralized.

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

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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:**
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, IMDG, IATA	UN2920
· UN proper shipping name · DOT · IMDG, IATA	Corrosive liquids, flammable, n.o.s. (Potassium 2-methyl-butan-2-olate, Toluene) CORROSIVE LIQUID, FLAMMABLE, N.O.S. (Potassium 2-methyl-butan-2-olate, TOLUENE)
· Transport hazard class(es) · DOT	
 	
· Class · Label	8 Corrosive substances 8, 3
· IMDG	
 	
· Class · Label	8 Corrosive substances 8/3
· IATA	
 	
· Class · Label	8 Corrosive substances 8 (3)
· Packing group · DOT, IMDG, IATA	I

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· Environmental hazards:	Not applicable.
· Special precautions for user	Warning: Corrosive substances
· Danger code (Kemler):	883
· EMS Number:	F-E,S-C
· Stowage Category	E
· Stowage Code	SW1 Protected from sources of heat. SW2 Clear of living quarters.
· Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 0.5 L On cargo aircraft only: 2.5 L
· IMDG	
· Limited quantities (LQ)	0
· Excepted quantities (EQ)	Code: E0 Not permitted as Excepted Quantity
· UN "Model Regulation":	UN 2920 CORROSIVE LIQUIDS, FLAMMABLE, N.O.S. (POTASSIUM 2-METHYL-BUTAN-2-OLATE, TOLUENE), 8 (3), I

15 Regulatory information

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

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

None of the ingredients is listed.

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

108-88-3 toluene

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

All ingredients are listed.

· **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:**

108-88-3 toluene

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

108-88-3 toluene

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

108-88-3 toluene

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**



GHS02



GHS05



GHS07



GHS08

· **Signal word** *Danger*

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

Potassium 2-methyl-butan-2-olate

toluene

· **Hazard statements**

H225 Highly flammable liquid and vapor.

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H361 Suspected of damaging fertility or the unborn child.

H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.

H373 May cause damage to organs through prolonged or repeated exposure.

H304 May be fatal if swallowed and enters airways.

· **Precautionary statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

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

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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

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

· **National regulations:**

· **Water hazard class:** Water hazard class 2 (Self-assessment): hazardous for water.

· **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:** Technical Department.

· **Contact:** Technical Director

· **Date of preparation / last revision** 07/19/2021 / -

· **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

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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. 4: Acute toxicity – Category 4
 Skin Corr. 1A: Skin corrosion/irritation – Category 1A
 Repr. 2: Reproductive toxicity – Category 2
 STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
 STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
 Asp. Tox. 1: Aspiration hazard – Category 1

US