

Safety Data Sheet

SECTION 1: Identification

Contact information

General



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Emergency telephone number Chemtrec (24-hour availability):
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Product identifier Mouse Brain Sample in Ethanol, 70% solution; ethyl alcohol 70% solution (surrounding glass slide)
Product number 10500005
Trade name Not applicable
Chemical family Mixture
Recommended uses and restrictions Reagent for research and development purposes only.
Note This SDS is written to address potential worker health and safety issues associated with the handling of the formulated product/mixture. Workers manufacturing this product/mixture should consult the SDS of each hazardous ingredient for hazard information and handling recommendations. This SDS will be revisited if more data become available.

SECTION 2: Hazard(s) identification

Flammable liquids Category 3
Flammable liquid and vapor

Label elements

GHS Hazard pictograms



GHS Signal word

Warning

GHS Hazard statements

H226 - Flammable liquid and vapor

GHS Precautionary statements

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking. P233 - Keep container tightly closed. 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. P280 - Wear eye/face protection. P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. P370 + P378 - In case of fire: Use water spray (fog), foam, dry powder, or carbon dioxide for extinction. P403 + P235 - Store in a well-ventilated place. Keep cool. P501 - Dispose of contents/container to location in accordance with local/regional/national/international regulations.

Other hazards

Ethanol is a central nervous system depressant, diuretic, and disinfectant. Commonly reported adverse effects at intoxicating doses include uncontrolled mood swings and emotional outbursts, anxiolytic actions, behavioral disinhibition, and respiratory depression. Splash contact of ethanol with the eye causes immediate stinging and burning. Heavy and prolonged consumption of ethanol may have fetal effects when ingested by pregnant women, including fetal alcohol syndrome, but this is not applicable with normal use. Prolonged or repeated exposure can cause drying and cracking of the skin with peeling, redness, and itching.

Note This mixture is classified as hazardous under GHS as implemented by Regulation EC No 1272/2008 (EU CLP), WHMIS 2015 (Health Canada), and Hazard Communication Standard No. 1910.1200 (US OSHA).

SECTION 3: Composition/Information on ingredients

Ingredient	CAS number	EINECS/ELINCS#	Amount	GHS classification
Ethanol	64-17-5	200-578-6	~70 %	Flam. Liq. 2, H225

Note The ingredient(s) listed above are considered hazardous. The remaining components of formulation are not hazardous and/or present at amounts below reportable limits.

SECTION 4: First-aid measures

Description of first aid measures

Immediate medical attention and special treatment, if necessary Yes.

Inhalation

If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician. Immediately move exposed subject to fresh air. If not breathing, give artificial respiration. If breathing is labored, administer oxygen. Immediately notify medical personnel and supervisor.

Skin contact

Wash exposed area with soap and water and remove contaminated clothing/shoes. If irritation occurs or persists, notify medical personnel and supervisor.

Eye contact

If easy to do, remove contact lenses, if worn. Immediately flush eyes with copious quantities of water for at least 15 minutes. If irritation occurs or persists, notify medical personnel and supervisor.

Ingestion

If swallowed, call a physician immediately. Do not induce vomiting unless directed by medical personnel. Do not give anything to drink unless directed by medical personnel. Never give anything by mouth to an unconscious person. Notify medical personnel and supervisor.

Most Important Symptoms/Effects

Medical conditions aggravated by exposure: None known or reported. Treat symptomatically and supportively.

Expected Symptoms/Effects, Acute and Delayed

See Sections 2 and 11

SECTION 5: Fire-fighting measures

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media

Small fires: Dry chemical. Carbon dioxide. Water spray. alcohol resistant foam. Large fires: Water fog. Use water spray (fog), foam, dry powder, or carbon dioxide, as appropriate for surrounding fire and materials.

Unsuitable extinguishing media

Do not use a heavy water stream. None known.

Specific hazards arising from the chemical

No information identified. May emit carbon monoxide, carbon dioxide, oxides of nitrogen and other nitrogen-containing compounds.

Fire hazard

Flammable liquid and vapor. Flammable vapors may accumulate in the container. Vapors are heavier than air and may travel considerable distance to an ignition source and flash back to source of vapors. No information identified.

Explosion hazard

May form flammable/explosive vapor-air mixture. Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.

Special protective equipment and precautions for fire-fighters

Firefighting instructions

Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment. In case of fire in the surroundings: use the appropriate extinguishing agent. Wear full protective clothing and an approved, positive pressure, self-contained breathing apparatus. Decontaminate all equipment after use.

Protection during firefighting

Do not enter fire area without proper protective equipment, including respiratory protection. Wear a self contained breathing apparatus. Wear fire/flame resistant/retardant clothing. EN469.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

General measures

Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking. Avoid all eye and skin contact and do not breathe vapor and mist.

Protective equipment

If product is released or spilled, take proper precautions to minimize exposure by using appropriate personal protective equipment (see Section 8). Area should be adequately ventilated.

Emergency procedures

Ventilate area. Do not breathe vapors/mist/spray.

Environmental precautions	Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Do not empty into drains. Avoid release to the environment.
Methods and material for containment and cleaning up	
For containment	Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.
Methods for cleaning up	DO NOT CAUSE MATERIAL TO BECOME AIRBORNE. For small spills, soak up material with absorbent, e.g. paper towels. For large spills, cordon off spill area and minimize the spreading of spilled material. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spilled material, absorbent, and rinse water into suitable containers for proper disposal in accordance with applicable waste disposal regulations (see Section 13). Decontaminate the area twice with an appropriate solvent (see Section 9). Store away from other materials. Notify authorities if product enters sewers or public waters.
Other information	Dispose of materials or solid residues at an authorized site.
Reference to other sections	See Sections 8 and 13 for more information.

SECTION 7: Handling and storage

Additional hazards when processed	Handle empty containers with care because residual vapors are flammable.
Precautions for safe handling	Follow recommendations for handling bulk formulated biochemical reagents (i.e. use of engineering controls and/or other personal protective equipment if needed). Avoid contact with eyes, skin and other mucous membranes. Wash thoroughly after handling. Do not breathe vapor/mist/spray.
Conditions for safe storage, including any incompatibilities	
Technical measures	Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment.
Storage conditions	Keep only in the original container in a cool well ventilated place. Keep in fireproof place. Keep container tightly closed. Store in a well-ventilated place. Keep refrigerated. Store locked up.
Incompatible products	Strong bases. Strong acids. Strong oxidizers. Reducing agents. Alkali metals.
Incompatible materials	Sources of ignition. Direct sunlight. Heat sources.
Storage temperature	≤ 4 °C
Specific end use(s)	Research and development.

SECTION 8: Exposure controls/personal protection

Note Dispose of broken glass (slides) in a sharps container.

Control parameters/Occupational Exposure Limits

Name	Issuer	Value
Ethanol	AT - MAK [mg/m ³]	1900 mg/m ³
	AT - MAK (OEL TWA) [ppm]	1000 ppm
	AT - MAK Short time value [mg/m ³]	3800 mg/m ³ max. 3x60 min./Schicht (gemessen als Momentanwert)
	AT - MAK Short time value [ppm]	2000 ppm max. 3x60 min./Schicht (gemessen als Momentanwert)
	AU - TWA (mg/m ³)	1920 mg/m ³
	AU - TWA (ppm)	1000 ppm
	BE - Limit value [mg/m ³]	1907 mg/m ³
	BE - Limit value [ppm]	1000 ppm
	CH - KZGW (mg/m ³)	1920 mg/m ³
	CH - KZGW (ppm)	1000 ppm
	CH - VME [mg/m ³]	960 mg/m ³
	CH - MAK (ppm)	500 ppm
	CZ - Exposure limits (NPK-P) (mg/m ³)	3000 mg/m ³
	CZ - Exposure limits (NPK-P) (ppm)	1590 ppm
	CZ - Exposure limits (PEL) (mg/m ³)	1000 mg/m ³
	CZ - Exposure limits (PEL) (ppm)	530 ppm
	DK - Grænseværdi (8 timer) (mg/m ³)	1900 mg/m ³
	DK - Grænseværdi (8 timer) (ppm)	1000 ppm
	DK - Grænseværdi (STEL) (mg/m ³)	3800 mg/m ³
	DK - Grænseværdi (STEL) (ppm)	2000 ppm
	ES - VLA-ED (mg/m ³)	1910 mg/m ³
	ES - VLA-ED (ppm)	1000 ppm
	FI - HTP-arvo (8h) (mg/m ³)	1900 mg/m ³
	FI - HTP-arvo (8h) (ppm)	1000 ppm
	FI - HTP-arvo (15 min)	2500 mg/m ³
	FI - HTP-arvo (15 min) (ppm)	1300 ppm
	FR - VLE [mg/m ³]	9500 mg/m ³
	FR - VLE [ppm]	5000 ppm

FR - VME [mg/m ³]	1900 mg/m ³
FR - VME (OEL TWA) [ppm]	1000 ppm
HU - Exposure Limit Value	1900 mg/m ³
HU - CK-érték	7600 mg/m ³
IE - OEL (15 min ref) (ppm)	1000 ppm
LT - IPRV (mg/m ³)	1000 mg/m ³
LT - IPRV (OEL TWA) [ppm]	500 ppm
LT - TPRV (mg/m ³)	1900 mg/m ³
LT - TPRV (ppm)	1000 ppm
LV - OEL TWA	1000 mg/m ³
NL - Grenswaarde TGG 15MIN (mg/m ³)	1900 mg/m ³
NL - Grenswaarde TGG 8H (mg/m ³)	260 mg/m ³
NO - TWA (AN) (mg/m ³)	950 mg/m ³
NO - TWA (AN) (ppm)	500 ppm
PL - NDS (mg/m ³)	1900 mg/m ³
PT - OEL STEL [ppm]	1000 ppm
SE - Kortidsvärde (KTV) (mg/m ³)	1900 mg/m ³
SE - Kortidsvärde (KTV) (ppm)	1000 ppm
SE - Nivågränsvärde (NVG) (mg/m ³)	1000 mg/m ³
SE - Nivågränsvärde (NVG) (ppm)	500 ppm
SK - NPHV (priemerná) (mg/m ³)	960 mg/m ³
SK - NPHV (priemerná) (ppm)	500 ppm
SK - NPHV (OEL STEL)	1920 mg/m ³
SK - NPHV (OEL STEL) [ppm]	1000 ppm
DE - Occupational exposure limit value (mg/m ³)	960 mg/m ³
DE - Occupational exposure limit value (ppm)	500 ppm
GB - WEL TWA (mg/m ³)	1920 mg/m ³
GB - WEL TWA (ppm)	1000 ppm
ACGIH OEL STEL [ppm]	1000 ppm
ACGIH TWA (mg/m ³)	1884 mg/m ³
ACGIH OEL TWA [ppm]	1000 ppm
NIOSH REL (TWA)	1900 mg/m ³
NIOSH REL TWA [ppm]	1000 ppm
OSHA PEL (TWA) [1]	1900 mg/m ³
OSHA PEL (TWA) [2]	1000 ppm
SI - OEL STEL	7600 mg/m ³

Appropriate engineering controls	Control exposures to below the OEL(s). Selection and use of containment devices and personal protective equipment should be based on a risk assessment of exposure potential. Use local exhaust and/or enclosure at aerosol/mist-generating points. Use engineered local exhaust ventilation (LEV) and/or enclosure for procedures where aerosolization may occur such as opened transfers, pumping, and spraying. Solutions can be handled outside a containment system or without LEV during procedures with no potential for aerosolization. All containers for solutions and slurries must be covered while being transferred.
Respiratory protection	Choice of respiratory protection should be appropriate to the task and the level of existing engineering controls. At a minimum, a tight-fitting full-face respirator with HEPA filters is required when performing aerosol-generating operations. A powered air-purifying respirator (PAPR) with HEPA filters and head cover is required for spill cleanup.
Hand protection	Wear nitrile or other impervious gloves if skin contact is possible. When the material is diluted in an organic solvent, wear gloves that provide protection against the solvent.
Eye protection	Wear safety glasses with side shields, chemical splash goggles, or full face shield, if necessary. Base the choice of protection on the job activity and potential for contact with eyes or face. An emergency eye wash station should be available.
Skin and body protection	Wear disposable coveralls appropriate to the task, booties, and safety glasses with side shields. Ensure gloves are protective against solvents in use. Protective garments (coveralls, disposable coveralls, lab coats) are not to be worn in common areas (e.g., cafeterias) or out-of-doors. Employees must be trained in proper gowning and degowning practices
Other protective measures	Wash hands in the event of contact with this product/mixture, especially before eating, drinking or smoking. Protective equipment is not to be worn outside the work area (e.g., in common areas or out-of-doors).
Environmental exposure controls	Avoid release to the environment and operate within closed systems wherever practicable. Air and liquid emissions should be directed to appropriate pollution control devices. In case of spill, do not release to drains. Implement appropriate and effective emergency response procedures to prevent release or spread of contamination and to prevent inadvertent contact by personnel.

SECTION 9: Physical and chemical properties

Physical state	Liquid
Appearance	Clear liquid - in glass slide

Formula	Not applicable (Mixture)
Molecular mass	Not applicable (Mixture)
Color	Colorless.
Odor	Sweet. Alcohol.
Odor threshold	No data available
pH	No data available
Melting point	No data available
Freezing point	No data available
Boiling point	~80 °C (estimated)
Flash point	~23 °C (estimated)
Relative evaporation rate (butyl acetate=1)	No data available
Flammability (solid, gas)	Flammable liquid and vapor.
Vapor pressure	No data available
Relative vapor density at 20 °C	No data available
Relative density	No data available
Density	No data available
Solubility	Soluble in water.
Log Pow	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity, kinematic	No data available
Viscosity, dynamic	No data available
Explosion limits	LEL - 3.3%; UEL - 19% (100% ethanol)
Explosive properties	No data available
Oxidizing properties	No data available

SECTION 10: Stability and reactivity

Reactivity	Flammable liquid and vapor.
Chemical stability	May form flammable/explosive vapor-air mixture.
Possibility of hazardous reactions	Hazardous polymerization will not occur.
Conditions to avoid	Direct sunlight. Extremely high or low temperatures. Open flame. Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.
Incompatible materials	Strong acids. Strong bases. Strong oxidizers. Reducing agents. Alkali metals.
Hazardous decomposition products	Carbon monoxide. Carbon dioxide. May release flammable gases. Nitrogen oxides.

SECTION 11: Toxicological information

Likely routes of exposure May be absorbed by inhalation, skin contact and ingestion.

Toxicological information

Acute toxicity

Component	Type	Dose
Ethanol	LD50 Oral rat	7060 mg/kg
	LC50 Inhalation rat	20000 ppm 10 h

Additional information

No data available

Serious eye damage/irritation

Ethanol is a moderate eye irritant in animals.

Skin corrosion/irritation

Ethanol is not a skin irritant in animals.

Sensitization

Ethanol is not a sensitizer.

STOT-single exposure

No data available

STOT-repeated exposure

Lowest reported NOAEL, Oral (Rat; up to 2 years) = 2400 mg/kg/day ethanol (minor biochemistry changes at higher doses; liver effects at ≥3600 mg/kg/day).

Reproductive toxicity

NOAEL, Oral (Rat) = 2000 mg/kg/day ethanol (fertility)

Developmental toxicity

As determined from collective animal studies: NOAEL, Oral = 6400 mg/kg/day ethanol (developmental effects). NOAEL, Oral = 3600 mg/kg/day ethanol (maternal effects). NOAEL, Inhalation (Rat) = 10000 ppm, 6 hours/day for 19 days of gestation. (Embryotoxic, fetotoxic, maternal effects).

Genotoxicity

Ethanol was negative in a battery of *in vitro* and *in vivo* assays

Carcinogenicity

Consumption of alcohol is listed as a group I IARC carcinogen (carcinogenic to humans). Ethanol is considered a confirmed animal carcinogen with unknown relevance to humans by ACGIH. No other components of the product present at levels greater than or equal to

<p>Aspiration hazard</p> <p>Experience with humans</p>	<p>0.1% are listed by NTP, IARC, ACGIH or OSHA as a carcinogen</p> <p>No data available</p> <p>See "Section 2 - Other Hazards".</p>
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Ethanol (64-17-5)	
IARC group	1 - Carcinogenic to humans

SECTION 12: Ecological information

Toxicity		
Component	Type	Concentration
ethanol	LC50 - Fish (96 hr) <i>Oncorhynchus mykiss</i> (Rainbow Trout)	> 10000 mg/l
	LC50 - Fish (96 hr) <i>Pimephales promelas</i> (Fathead Minnow)	> 13400 mg/l
Persistence and degradability	Ethanol is readily biodegradable.	
Bioaccumulative potential	Ethanol is not likely to bioaccumulate (based on the log K_{OW} and a BCF value <4).	
Mobility in soil	Ethanol would move quickly through soil, if released.	
Results of PBT assessment	No data available	
Other adverse effects	No data available	
Note	The environmental characteristics of this product/mixture have not been fully investigated. Releases to the environment should be avoided.	

SECTION 13: Disposal considerations

Waste treatment methods	Used product should be disposed of according to local, state, and federal regulations. All wastes containing the material should be properly labeled. Dispose of wastes in accordance to prescribed federal, state, and local guidelines, e.g, appropriately permitted chemical waste incinerator. Rinse waters resulting from spill cleanups should be discharged in an environmentally safe manner, e.g, appropriately permitted municipal or on-site wastewater treatment facility.
Waste disposal recommendations	Dispose in a safe manner in accordance with local/national regulations.
Additional information	Handle empty containers with care because residual vapors are flammable. Flammable vapors may accumulate in the container.
Ecology - waste materials	Avoid release to the environment.

SECTION 14: Transport information

Transport	Based on the available data, this product/mixture is regulated as a hazardous material/dangerous good under EU ADR/RID, US DOT, Canada TDG, IATA, or IMDG.
UN number	UN1170
UN proper shipping name	Ethanol solution
Transport hazard class(es) (DOT)	3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
Packing group	III - Minor Danger
Marine pollutant	Based on the available data, this product/mixture is not regulated as an environmental hazard or a marine pollutant.
Special transport precautions	Avoid release to the environment.
Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable

SECTION 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture	This SDS generally complies with the requirements listed under current guidelines in the US, EU and Canada. Consult your local or regional authorities for more information.
Chemical safety assessment	No chemical safety assessment has been carried out.
TSCA	All components of this product are listed as active, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.
SARA Section 313 - Emission Reporting	This substance or mixture is not known to contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

California Proposition 65

California Proposition 65 - Ethyl alcohol (ethanol) as contained in alcoholic beverages (and consumed) is listed as a reproductive toxicant, but this is not applicable with normal use of this product.

Additional information

No additional information available

SECTION 16: Other information

Full text of H phrases and GHS classification

Flam. Liq. 2 - Flammable liquids Category 2.
Flam. Liq. 3 - Flammable liquids Category 3.
H225 - Highly flammable liquid and vapor.
H226 - Flammable liquid and vapor.

Data sources

Information from published literature and internal company data.

Abbreviations and acronyms

ACGIH - American Conference of Governmental Industrial Hygienists; ADR/RID - European Agreement Concerning the International Carriage of Dangerous Goods by Road/Rail; AIHA - American Industrial Hygiene Association; CAS# - Chemical Abstract Services Number; CLP - Classification, Labelling, and Packaging of Substances and Mixtures; DNEL - Derived No Effect Level; DOT - Department of Transportation; EINECS - European Inventory of New and Existing Chemical Substances; ELINCS - European List of Notified Chemical Substances; EU - European Union; GHS - Globally Harmonized System of Classification and Labeling of Chemicals; IARC - International Agency for Research on Cancer; IDLH - Immediately Dangerous to Life or Health; IATA - International Air Transport Association; IMDG - International Maritime Dangerous Goods; LOEL - Lowest Observed Effect Level; LOAEL - Lowest Observed Adverse Effect Level; NIOSH - The National Institute for Occupational Safety and Health; NOEL - No Observed Effect Level; NOAEL - No Observed Adverse Effect Level; NTP - National Toxicology Program; OEL - Occupational Exposure Limit; OSHA - Occupational Safety and Health Administration; PBT - Persistent, Bioaccumulative, and Toxic; PNEC - Predicted No Effect Concentration; SARA - Superfund Amendments and Reauthorization Act; STOT - Specific Target Organ Toxicity; STEL - Short Term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

Issue Date

27 October 2021

Current revision

1.0

Indication of changes

This is the first version of this SDS.

Disclaimer

The above information is based on data available to us and is believed to be correct. Since the information may be applied under conditions beyond our control and with which we may be unfamiliar, we do not assume any responsibility for the results of its use and all persons receiving it must make their own determination of the effects, properties and protections which pertain to their particular conditions. No representation, warranty, or guarantee, express or implied (including a warranty of fitness or merchantability for a particular purpose), is made with respect to the materials, the accuracy of this information, the results to be obtained from the use thereof, or the hazards connected with the use of the material. Caution should be used in the handling and use of the material because it is a biochemical reagent. The above information is offered in good faith and with the belief that it is accurate. As of the date of issuance, we are providing all information relevant to the foreseeable handling of the material. However, in the event of an adverse incident associated with this product, this Safety Data Sheet is not, and is not intended to be, a substitute for consultation with appropriately trained personnel.