SDS DATE: May 29, 2023

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **Urea Assay**
PRODUCT CODES: **Cat# MA-0118**
RESTRICTIONS ON USE: **For laboratory research purposes only. Not for drug or household use.**
MANUFACTURER: **AkrivisBio, Inc.**
ADDRESS: **48511 Warm Springs Blvd., Suite 213, Fremont, CA 94539**
EMERGENCY PHONE: **408-739-9315**
OTHER CALLS:
FAX PHONE:
EMAIL: **sds@akrivisbio.com**

SECTION 2: HAZARDS IDENTIFICATION

Component	Description	Volume	Safety Information
Assay Buffer	Liquid (contains Tergitol)	25 ml	See below
ADHP Solution	In DMSO	200 µl	See below
Pyruvate Oxidase/HRP	Lyophilized	1 vial	No hazards
LDH/GDH	Lyophilized	1 vial	No hazards
Urease	Lyophilized	1 vail	No hazards
Urea Standard (100mM)	Liquid (contains DMSO)	100 µl	See below

Tergitol:
Emergency Overview
GHS Classification: Skin irritation (Category 2), H31
Skin sensitization (Sub-category 1A), H317
Short-term (acute) aquatic hazard (Category 1), H400
Long-term (chronic) aquatic hazard (Category 1), H410
GHS Label elements, including precautionary statements
Pictogram:

Signal word: Warning
Hazard statement(s): H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H410 Very toxic to aquatic life with long lasting effects.
Precautionary statement(s): P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P272 Contaminated work clothing must not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P391 Collect spillage.
P501 Dispose of contents/ container to an approved waste disposalplant

HMIS Classification
Health hazard: 0
Chronic health hazard:
Flammability: 0
Physical hazards: 0
NFPA Rating
Health hazard: 0
Fire: 0
Reactivity hazard: 0
Potential Health Effects
Inhalation: May be harmful if inhaled. Material is irritating to the tissue of the mucous membranes and upper respiratory tract.Harmful; if inhaled. May cause allergy or asthma symptoms or breathing difficulties.
Skin: May be harmful if absorbed through skin. May cause an allergic skin reaction.
Eyes: Causes eye irritation.
Ingestion: Harmful if swallowed.
To the best of our knowledge, the toxicological properties have not been thoroughly investigated

DMSO:
Emergency Overview
OSHA Hazards: Combustible liquid, Target organ effect
Target Organs: Eyes, Skin
GHS Classification: Flammable liquids (Category 4)
GHS Label elements, including precautionary statements
Pictogram: none
Signal word: Warning
Hazard statement(s): H227 Combustible liquid

Precautionary statement(s): none
HMIS Classification
Health hazard: 0
Chronic Health Hazard: *
Flammability: 2
Physical hazards: 0
NFPA Rating
Health hazard: 0
Fire: 2
Reactivity Hazard: 0
Potential Health Effects
Inhalation: May be harmful if inhaled. May cause respiratory tract irritation.
Skin: May be harmful if absorbed through skin. May cause skin irritation.
Eyes: May cause eye irritation.
Ingestion: May be harmful if swallowed.
Aggravated Medical Condition: Avoid contact w/DMSO solutions containing toxic materials or materials with unknown toxicological properties. DMSO is readily absorbed through skin and may carry such materials into the body.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS Number	EC-No.	Molecular Weight	Chemical Formula	Concentration
Tergitol	84133-50-6	617-534-0	--	--	≤0.5%
DMSO	67-68-5	200-664-3	78.13	C_2H_6OS	<100%

SECTION 4: FIRST AID MEASURES

General advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
If inhaled: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact: Wash off with soap and plenty of water. Consult a physician.
In case of eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
If swallowed: DO NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

SECTION 5: FIRE-FIGHTING MEASURES

Tergitol:
Suitable extinguishing media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.
Unsuitable Extinguishing Media: Do not use direct water stream. May spread fire.
Special hazards arising from the substance or mixture: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.
Advice for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.
Further information: Keep people away. Isolate fire and deny unnecessary entry. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage

DMSO:
Suitable extinguishing media: For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.
Special protective equipment for firefighters: Wear self-contained breathing apparatus for firefighting if necessary.
Hazardous combustion products: Hazardous decomposition products formed under fire conditions – see section 10.
Further information: Use water spray to cool unopened containers.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions: Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
Methods for cleaning up: Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Use explosion-proof equipment. Keep away from sources of ignition (no smoking). Take measures to prevent the buildup of electrostatic charge.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Recommended storage temperature: -20 °C.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Tergitol:
Control parameters
Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
Poly(ethylene oxide)	US WEEL	TWA aerosol	10 mg/m3

Engineering Controls: Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

Personal protective equipment:

Respiratory Protection
Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. In misty atmospheres, use an approved particulate respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

Hand protection
Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber,Chlorinated polyethylene, Polyethylene.

Eye protection
Use chemical goggles.

Skin and body protection
Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task

DMSO:

Components	CAS-No.	Value	Control parameters	Basis
Dimethyl sulfoxide	67-68-5	TWA	250 ppm	USA. Workplace Environmental Exposure Levels (WEEL)

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Tightly fitting safety goggles. Face shield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Property	Tergitol	DMSO
Appearance:	Liquid	Clear liquid
pH:	7.2	No data available
Water Solubility:	< 0.5 %	Completely miscible
Other Solubility:	No data available	No data available
Boiling Point (°C):	> 200 °C (> 392 °F)	189 °C (372 °F)
Melting Point (°C):	No data available	16-19 °C (61-66 °F)
Flash Point (°C):	218 °C (424 °F) ASTM D 93, closed cup	87 °C (189 °F)
Ignition Temperature (°C):	No data available	301 °C (574 °F)
Density:	1.027 at 20 °C (68 °F) / 20 °C	1.1 g/ml

SECTION 10: STABILITY AND REACTIVITY

Property	Tergitol	DMSO
Chemical stability:	Stable under recommended storage conditions	
Conditions to avoid:	Strong heating	Heat, flames, sparks
Materials to avoid:	Strong acids, Strong bases, Strong oxidizing agents	Acid chlorides, phosphorus halides, strong acids, strong oxidizing agents, strong reducing agents
Hazardous decomposition products:	Carbon oxides(fire condition)	Carbon oxides, sulfur oxides

SECTION 11: TOXICOLOGICAL INFORMATION

Tergitol:

Acute toxicity: No data available
Skin corrosion/irritation: Mixture causes skin irritation.
Serious eye damage/eye irritation: No data available
Respiratory or skin sensitization: Mixture may cause an allergic skin reaction.
Germ cell mutagenicity: No data available
Carcinogenicity:

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: No data available
Specific target organ toxicity – single exposure (GHS): No data available
Specific target organ toxicity – repeated exposure (GHS): No data available
Aspiration hazard: No data available
Synergistic effects: No data available
Additional information: RTECS: No data available

DMSO:

Acute toxicity: LD50 Oral - rat - 14,500 mg/kg
LC50 Inhalation - rat - 4 h - 40250 ppm
LD50 Dermal - rabbit - > 5,000 mg/kg
Skin corrosion/irritation: no data available
Serious eye damage/eye irritation: no data available
Respiratory/skin sensitization: no data available
Germ cell mutagenicity: Genotoxicity in vitro - mouse – lymphocyte→ Cytogenetic analysis
Genotoxicity in vitro - mouse – lymphocyte→ Mutation in mammalian somatic cells.
Genotoxicity in vivo - rat – Intraperitoneal→ Cytogenetic analysis
Genotoxicity in vivo - mouse – Intraperitoneal→ DNA damage
Carcinogenicty: Carcinogenicity – rat – Oral→ Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Skin & Appendages: Other: Tumors.
Carcinogenicty – mouse – Oral→ Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Leukaemia Skin & Appendages: Other: Tumors.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: Reproductive toxicity – rat – Intraperitoneal→ Effects on Fertility: Abortion.
Reproductive toxicity – rat – Intraperitoneal→ Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).
Reproductive toxicity – rat – Subcutaneous→ Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth).
Reproductive toxicity –mouse – Oral→ Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Musculoskeletal system.
Teratogenicity: Developmental Toxicity – mouse – Intraperitoneal→ Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Musculoskeletal system.
Signs and Symptoms of Exposure: Exposure via ingestion may cause nausea, fatigue, headache.
Additional Information: RTECS: PV6210000

SECTION 12: ECOLOGICAL INFORMATION

Tergitol:

Toxicity: No data available
Persistence and degradability: Readily biodegradable
Bioaccumulative potential: No data available
Mobility in soil: No data available
PBT and vPvB assessment: No data available
Other adverse effects: No data available

DMSO:
Persistence and degradability: no data available
Toxicity: Toxicity to fish: LC50 – Pimephales promelas (fathead minnow) – 34,000 mg/l – 96 h
LC50 – Oncorhynchus mykiss (rainbow trout) – 35,000 mg/l – 96 h
Toxicity to daphnia and other aquatic invertebrates: EC50 – Daphnia pulex (Water flea) – 27,500 mg/l
Toxicity to algae: EC50 – Lepomis macrochirus (Bluegill) – >400,000 mg/l – 96 h
Bioaccumulative potential: no data available
Mobility in soil: no data available
PBT and vPvB assessment: no data available
Other adverse effects: no data available

SECTION 13: DISPOSAL CONSIDERATIONS

Product: Observe all federal, state, and local environmental regulations.
Contaminated packaging: Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

Tergitol:
DOT (US): Not dangerous goods
IMDG: UN number: 3082 Class: 9 Packing group: III EMS-No: F-A, S-F
Proper shipping name: Environmentally hazardous substance, liquid.
Marine pollutant : yes
IATA: UN number: 3082 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, liquid.

DMSO:
DOT (US): UN-Number: 1993, Class: CBL, Packing group: III; Proper shipping name: Combustible liquid, n.o.s. (Dimethyl sulfoxide); Marine pollutant: No; Poison Inhalation Hazard: No
IMDG: Not dangerous goods.
IATA: Not dangerous goods.

SECTION 15: REGULATORY INFORMATION

OSHA Hazards: DMSO: Combustible liquid, Target organ effect
SARA 302 Components: SARA 302: No chemical in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313 Components: SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title II, Section 313.
SARA 311/312 Hazards: DMSO: Fire Hazard, Chronic Health Hazard
Massachusetts Right To Know Components: No components are subject to the Massachusetts Right to Know Act.
Pennsylvania Right To Know Components: Dimethyl sulfoxide CAS-No. 67-68-5; Revision Date: 2007-03-01
New Jersey Right To Know Components: Dimethyl sulfoxide CAS-No. 67-68-5; Revision Date: 2007-03-01
California Prop. 65 Components: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

EU regulations

Component	Risk Phrases	Safety Phrases
Tergitol	--	--
DMSO	R10, R36/37/38	S24/25, S36/37/39, S45

SECTION 16: OTHER INFORMATION

DISCLAIMER:
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. AkrivisBio, Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.