SDS DATE: July 10, 2023

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **Total Carbohydrate Assay**
PRODUCT CODES: **Cat# MA-0144**
RESTRICTIONS ON USE: **For laboratory research purposes. 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	Proprietary Buffer (contains Tergitol)	25 ml	See below
Phenol Solution	Liquid (contains Phenol)	3 ml	See below
Standard (D-Glucose, 2 mg/ml)	Liquid	0.2 ml	No hazards

Tergitol:
Emergency Overview
GHS Classification: Skin irritation (Category 2), H315
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

Phenol:
Emergency Overview
OSHA Hazards: Target organ effect, Toxic by inhalation, Toxic by ingestion, Toxic by skin absorption, Corrosive, Mutagen
Target Organs: Central nervous system, Kidney, Liver, Pancreas, Spleen
Other hazards which do not result in classification: Rapidly absorbed through skin, Vessicant
GHS Classification: Acute toxicity, Oral (Category 3)
Acute toxicity, Inhalation (Category 3)
Acute toxicity, Dermal (Category 3)
Skin corrosion (Category 1B)
Serious eye damage (Category 1)
Germ cell mutagenicity (Category 2)
Specific target organ toxicity – single exposure (Category 2)
Specific target organ toxicity – repeated exposure (Category 2)
Acute aquatic toxicity (Category 3)

GHS Label elements, including precautionary statements
Pictogram:

Signal word: Danger

Hazard statement(s):
H301+H311 Toxic if swallowed or in contact with skin.
H314 Causes severe skin burns and eye damage.
H331 Toxic if inhaled.
H341 Suspected of causing genetic defects.
H371 May cause damage to organs.
H373 May causes damage to organs through prolonged or repeated exposure.
H402 Harmful to aquatic life.

Precautionary statement(s):
P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P303+P361+P353 IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P307+P311 IF exposed: Call a POISON CENTER or doctor/physician.
P310 Immediately call a POISON CENTER or doctor/physician.

HMIS Classification
- **Health hazard**: 3
- **Fire hazard**: *
- **Flammability**: 0
- **Physical hazards**: 0

NFPA Rating
- **Health Hazard:** 3
- **Fire**: 2
- **Reactivity Hazard**: 0

Potential Health Effects
- **Inhalation:** Toxic if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
- **Skin:** Toxic if absorbed through skin. Causes skin burns.
- **Eyes:** Causes eye burns.

Ingestion: Toxic if swallowed.

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%
Phenol	108-95-2	203-632-7	94.11	C_6H_6O	<6%

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: Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.
In case of eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.
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

Condition of flammability: Not flammable or combustible.
Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Special protective equipment for fire-fighters: Wear self-contained breathing apparatus for firefighting if necessary.
Hazardous combustion products: Hazardous combustion products formed under fire conditions— no data available.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions: Wear respiratory protection. 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 formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.
Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.
Recommended storage temperature: +4°C

Handle and store under inert gas. Light sensitive.

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

Phenol:

Components	CAS-No.	Value	Control parameters	Basis
Phenol	108-95-2	TWA	5 ppm	USA. ACGIH Threshold Limit Values (TLV)
Remarks:	Central nervous system impairment, upper respiratory tract irritation, lung damage. Substances for which there is a Biological Exposure Index or Indices. Not classifiable as a human carcinogen. Danger of cutaneous absorption.			
		TWA	5 ppm 19 mg/m^3	USA. OSHA – Table Z-1 Limits for Air Contaminants – 1910.1000
	Skin notation.			
		STEL	5 ppm 19 mg/m^3	USA. Occupational Exposure Limits (OSHA) – Table Z-1 Limits for Air Contaminants
	Skin designation. The value in mg/m^3 is approximate.			
		TWA	5 ppm 19 mg/m^3	USA. NIOSH recommended exposure limits
	Potential for dermal absorption. 15 minute ceiling value.			
		C	15.6 ppm 60 mg/m^3	USA. NIOSH recommended exposure limits
	Potential for dermal absorption. 15 minute ceiling value.			

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

Face shield and safety glasses. 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

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Property	Tergitol	Phenol
Appearance:	Liquid	Solid
pH:	7.2	6.0
Water Solubility:	< 0.5 %	No data available
Other Solubility:	No data available	No data available
Boiling Point (°C):	No data available	182 °C (360 °F)
Melting Point (°C):	> 200 °C (> 392 °F)	40-42 °C (104-108 °F)
Flash Point (°C):	218 °C (424 °F) ASTM D 93 closed cup	79.0 °C (174.2 °F) – closed cup
Ignition Temperature (°C):	No data available	715 °C (1,319 °F)
Density:	1.027 at 20 °C (68 °F) / 20 °C	1.071 g/ml at 25 °C (77 °F)

SECTION 10: STABILITY AND REACTIVITY

Property	Tergitol	Phenol
Chemical stability:	Stable under recommended storage conditions	
Conditions to avoid:	Strong heating	No data available
Materials to avoid:	Strong acids, Strong bases, Strong oxidizing agents	Strong oxidizing agents, strong bases, strong acids
Hazardous decomposition products:	Carbon oxides(fire condition)	Carbon 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

Phenol:
Acute toxicity: LD50 Oral – rat – 317 mg/kg→ Remarks: Behavioral: convulsions or effect on seizure threshold.
LD50 Oral – rat – 410-650 mg/kg
LC50 Inhalation – rat – 900 mg/m^3 – 8 h
LD50 Dermal – rabbit – 630 mg/kg
Skin corrosion/irritation: Skin – rabbit – severe skin irritation – 24 h
Serious eye damage/eye irritation: Eyes – rabbit – severe eye irritation
Respiratory or skin sensitization: no data available
Germ cell mutagenicity: In vitro tests showed mutagenic effects.
Carcinogenicity: This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP or EPA classification.

IARC: 3 – Group 3: Not classifiable as to its carcinogenicity to humans (Phenol)
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
Teratogenicity: no data available
Specific target organ toxicity – single exposure (GHS): no data available
Specific target organ toxicity – repeated exposure (GHS): May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard: no data available
Potential Health Effects

Inhalation: Toxic if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Skin: Toxic if absorbed through skin. Causes skin burns.
Eyes: Causes eye burns.
Ingestion: Toxic if swallowed.

Signs and Symptoms of Exposure: To the best of our knowledge, the chemical, physical, and toxicological properties have not been through investigated.
Synergistic effects: no data available
Additional information: RTECS: SJ3325000

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

Phenol:
Persistence and degradability: no data available
Toxicity:

Toxicity to fish→ LC50 – Leuciscus idus (Golden orfe) – 14.00-25.00 mg/l – 48 h
LC50 – Carassius auratus (Goldfish) – 36.10-68.80 mg/l – 96 h
Toxicity to daphnia and other aquatic invertebrates→ EC50 – Daphnia magna (Water flea) – 12.00 mg/l – 24 h
EC 100 – Daphnia magna (Water flea) – 100.00 mg/l – 24 h
Toxicity to algae→ EC50 – Chlorella vulgaris (Fresh water algae) – 370.00 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: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life.

SECTION 13: DISPOSAL CONSIDERATIONS

Product: Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
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.
Phenol:
DOT (US): UN-number: 1671, Class: 6.1, Packing group: II; Proper shipping name: Phenol, solid; Reportable Quantity (RQ): 1000 lbs; Marine pollutant: No; Poison inhalation hazard: No
IMDG: UN-number: 1671, Class: 6.1, Packing group: II; EMS-No: F-A, S-A; Proper shipping name: PHENOL, SOLID; Marine pollutant: No
IATA: UN-number: 1671, Class: 6.1, Packing group: II; Proper shipping name: Phenol, solid

SECTION 15: REGULATORY INFORMATION

OSHA Hazards: Phenol: Target organ effect, Toxic by inhalation, Toxic by ingestion, Toxic by skin absorption, Corrosive, Mutagen
SARA 302 Components: The following components are subject to reporting levels established by SARA Title III, Section 302:
Phenol, CAS-No. 108-95-2; Revision Date: 2007-07-01
SARA 313 Components: The following components are subject to reporting levels established by SARA Title II, Section 313:
Phenol, CAS-No. 108-95-2; Revision Date: 2007-07-01
SARA 311/312 Hazards: Phenol: Acute Health Hazard, Chronic Health Hazard
Massachusetts Right To Know Components: Phenol, CAS-No. 108-95-2; Revision Date: 2007-07-01
Pennsylvania Right To Know Components: Phenol, CAS-No. 108-95-2; Revision Date: 2007-07-01
New Jersey Right To Know Components: Phenol, CAS-No. 108-95-2; Revision Date: 2007-07-01
California Prop. 65 Components: : ⚠ WARNING: This product can expose you to chemicals including Phenol, which is considered to the State of California to cause Reproductive toxicity. For more information go to www.P65Warnings.ca.gov.

EU regulations

Component	Risk Phrases	Safety Phrases
Tergitol	R38	S36/37/39
Phenol	R23/24/25, R34, R48/20/21/22, R68	S24/25, S26, S28, 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.