

Material Safety Data Sheet

Section 1: Product Information		
Product Name: NWLSS™ Malondialdehyde Assay		
Product Number: NWK-MDA01		
Manufacturer's Information:		
Company Name:	Northwest Life Science Specialties, LLC	
Address:	5131 NE 94th Avenue Vancouver, WA 98683	
Emergency Phone:	888-449-3091, 360-449-3091	
Section 2: Components		
<u>Part Description</u>	<u>Quantity</u>	
TBA: 2-Thiobarbituric Acid	5 X 10 mg	
Acid Reagent: Phosphoric Acid 1 M	5 x 10 mL	
Assay Buffer: Potasium Phosphate buffer with EDTA	1 x 125 mL	
TMOP Standards: Tetramethoxypropane in stabilizing buffer (0-4 µM)	5 x 2.5 mL	
BHT: Butylated Hydroxytoluene in Methanol 0.5 M	1 x 2.5 mL	
Section 3: Hazardous Ingredients		
<u>Known Hazardous Components:</u>	<u>CAS Number</u>	<u>Percent</u>
TBA: 2-Thiobarbituric Acid	504-17-6	98%
Phosphoric Acid in Water 1 M	None	
Phosphoric Acid	7664-38-02	≥85%
Water	7732-18-5	≥15%
Potassium Phosphate, Dibasic	7758-11-4	0.9%
Sodium Dihydrogen Phosphate Monohydrate	10049-21-5	0.7%
Ethylenediaminetetraacetic Acid (EDTA)	6381-92-6	0.1%
1,1,3,3-Tetramethoxypropane	102-52-3	NA
Butylated Hydroxytoluene	128-37-0	5%
Methanol	67-56-1	100%
Section 4: Fire and Explosion Data		
Methanol:		
Flammable (USA), Highly Flammable (EU)		
1,1,3,3-Tetramethoxypropane		
Combustible (USA), Flammable (EU)		
Fire fighting media should be selected as appropriate to surrounding fire conditions.		
Firefighters should wear suitable protective gear to limit exposure possibilities including inhalation.		

Section 5: Stability and Reactivity

The unopened product is stable until the date indicated on the label if stored as specified. Individual and reconstituted components are stable as specified in the product insert. There are no known hazardous reactions between these components. Acid solutions should be kept away from strong bases and finely powdered metals.

Section 6: Toxicological Information

TBA: 2-Thiobarbituric Acid	<u>Test</u>	<u>Result</u>	<u>Route</u>	<u>Species</u>
	LD50	>500 mg/kg	Oral	Rat
	LD50	600 mg/kg	IP	Rat

Acute Effects: Mild Irritant. May irritate eyes, mucous membranes and upper respiratory tract.

May be harmful if absorbed through the skin, inhaled or swallowed

Acid Reagent: Phosphoric Acid 1 M	<u>Test</u>	<u>Result</u>	<u>Route</u>	<u>Species</u>
	LD50	1530 mg/kg	Oral	Rat
	LD50	2740 mg/kg	Skin	Rabbit
	LC50	>850 mg/m ³	Inhalation	Rat

Acute Effects: Corrosive. Causes burns to skin, eyes, mucous membranes and upper respiratory tract.

May be harmful if absorbed through the skin, inhaled or swallowed.

Chronic Effects: No known chronic toxicity.

Potassium Phosphate, Dibasic

Acute Effects: Mild Irritant

Chronic Effects: No known chronic toxicity.

Sodium Dihydrogen Phosphate Monohydrate

Acute Effects: Mild Irritant

Chronic Effects: No known chronic toxicity.

Ethylenediaminetetraacetic Acid	<u>Test</u>	<u>Result</u>	<u>Route</u>	<u>Species</u>
	LD50	>2000 mg/kg	Oral	Rat

Chronic Effects: Mutagenic

<u>Test</u>	<u>Dose</u>	<u>Cell Type</u>	<u>Species</u>
Cytogenic Analysis	200 mg/L	Lung	Hamster

1,1,3,3-Tetramethoxypropane	<u>Test</u>	<u>Result</u>	<u>Route</u>	<u>Species</u>
	LD50	27 mg/kg	Oral	Rat
	LC50	37 mg/m ³	Inhalation	Rat

Acute Effects: Mild Irritant

Irritating to eyes, respiratory system and skin.

May be harmful if swallowed.

Chronic Effects: No known chronic toxicity.

Butylated Hydroxytoluene	<u>Test</u>	<u>Result</u>	<u>Route</u>	<u>Species</u>
	LD50	890 mg/kg	Oral	Rat
	LD50	650 mg/kg	Oral	Mouse
Acute Effects: Moderate irritant				
Irritating to eyes, respiratory system and skin.				
May be harmful if inhaled,swallowed or absorbed through skin..				
Chronic	Effects: Carcinogen-Teratogen-Mutagen-Reproductive Hazard			
	Carcinogenicity:			
	Has been shown to be carcinogenic in laboratory animals after 32W oral exposure.			
	Teratogenicity:			
	Has been shown to cause abnormalities of the musculoskeletal system in mouse after exposue to 1200 mg/kg at 9D Preg.			
	Mutagenicity:			
	<u>Test</u>	<u>Dose</u>	<u>Cell type</u>	<u>Species</u>
	DNA Inhibition	500 uMol/L	Lymphocyte	Human
	<u>Test</u>	<u>dose</u>	<u>Route</u>	<u>Species</u>
	DNA Damage	1400 mg/kg	Oral	Rat
Methanol	<u>Test</u>	<u>Result</u>	<u>Route</u>	<u>Species</u>
	LDLO	428 mg/kg	Oral	Human
	LD50	5628 mg/kg	Oral	Rat
	LC50	64,000 ppm	Inhalation	Rat
	Acute Effects: Moderate irritant			
Irritating to eyes, respiratory system and skin.				
May be harmful if inhaled,swallowed or absorbed through skin..				
Chronic	Effects: Teratogen-Mutagen-Reproductive Hazard			
	Teratogenicity:			
	Has been shown to cause specific developmental abnormalities of the musculoskeletal system and nervous system in mouse and rat under various exposure conditions.			
	Mutagenicity:			
	<u>Test</u>	<u>Dose</u>	<u>Cell type</u>	<u>Species</u>
	DNA Inhibition	300 mMol/L	Lymphocyte	Human
	<u>Test</u>	<u>dose</u>	<u>Route</u>	<u>Species</u>
	DNA Damage	10 uMol/kg	Oral	Rat
	Reproductive Hazard:			
	Has been shown to cause pre and post implantation mortality and reduced spermatogenesis and sperm motility in rats and mice.			
	Section 7: Preventive Measures / Exposure Control			
The physical, chemical and toxicological properties of these components have not been fully investigated. It is recommended that laboratory personnel minimize direct skin or eye contact by following standard laboratory safety procedures when handling this product. Standard safety procedures should include wearing OSHA approved safety glasses, gloves and protective clothing.				

Section 8: First Aid Measures	
<u>Skin Exposure</u>	Remove any contaminated clothing. Flush affected area with copious amounts of water for at least 15 minutes then wash thoroughly. If irritation persists, contact a physician to seek medical advice.
<u>Eye Exposure</u>	If wearing contact lenses, remove them. Flush with copious amounts of water for at least 15 minutes.
<u>Ingestion</u>	If swallowed and individual is conscious, wash out mouth with water. Contact a physician to seek medical advice.
<u>Inhalation</u>	Move to fresh air. If difficulty breathing, oxygen may be administered. If breathing stops, administer artificial respiration and seek emergency medical assistance.
Section 9: Accidental Release / Spillage Measures	
Ventilate area. Shut off all sources of ignition. Wear appropriate protective gear. Wipe or pick-up spilled material, place in sealed container if necessary, dispose of in accordance with federal, state, and local regulations. Wash spill site thoroughly after material pick-up is complete.	
Section 10: Handling and Storage	
This product should be stored as recommended on the product label. All components should be kept in tightly closed containers. Refer to the Storage section of the product insert for additional information. This product should only be handled and used by qualified, trained professional laboratory personnel.	
Section 11: Other Information	
This information is believed to be correct however does not claim to be all inclusive and is intended as a general guide only. Northwest Life Science Specialties, LLC shall not be held liable for any damage resulting from handling of or contact with this product or components therein. The burden of safe use of this and other products used in connection with this product rests solely with the user.	