

Safety Data Sheet (SDS)

<i>Revision Number: 1.1</i>	<i>Last updated: May 2015</i>
-----------------------------	-------------------------------

1. Product and Company Identification

<i>Product Name:</i>	SensoLyte™ 520 Total GSH Kit *Colorimetric*
<i>Manufacturer/Supplier:</i>	AnaSpec, Inc. www.anaspec.com 34801 Campus Drive Fremont, CA 94555 Tel: 510-791-9560 Fax: 510-791-9572 Email: service@anaspec.com
<i>Catalog Number</i>	AS-72153
<i>Unit Size</i>	1 kit

2. Hazards Identification

Emergency Overview:

GHS Hazard Classification:

GHS Physical Hazards

- Component A:** Flammable liquid (Category 2)
- Component B:** None
- Component C:** None
- Component D:** None
- Component E:** Not Applicable
- Component F:** Acute toxicity, Oral (Category 4)

GHS Health and Environmental Hazards

- Component A:** Irritant to eyes and skin
- Component B:** H316 Causes Mild Skin Irritation
H320 Causes Mild Eye Irritation
- Component C:** H316 Causes Mild Skin Irritation
H320 Causes Mild Eye Irritation
- Component D:** H316 Causes Mild Skin Irritation
H320 Causes Mild Eye Irritation
- Component E:** May cause eye and skin irritation.
May cause respiratory and digestive tract irritation.
- Component F:** Irritant to eyes, skin and respiratory system

AnaSpec Inc.

34801 Campus Drive, Fremont, CA 94555

Toll-Free: 800-452-5530 • Tel: 510-791-9560 • Fax: 510-791-9573

GHS Signal Words:

Component A: Warning
Component B: Warning
Component C: Warning
Component D: Warning
Component E: Warning
Component F: Warning

GHS Hazard Statements:

Component A: H227 Combustible liquid.
Component B: H302 Harmful if swallowed.
Component C: H302 Harmful if swallowed.
Component D: H302 Harmful if swallowed.
Component E: H313 No chemicals are reportable under Section 313.
Component F: H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

GHS Precautionary Statements:

Component A: None
Component B: None
Component C: None
Component D: None
Component E: None
Component F: P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

HMIS Classification:

Component A:	Component B:	Component C:	Component D:	Component E:	Component F:
<i>Health hazard: 0</i>	<i>Health hazard: 0</i>	<i>Health hazard: 0</i>	<i>Health hazard: 0</i>	<i>Health hazard: 0</i>	<i>Health hazard: 2</i>
<i>Flammability: 2</i>	<i>Flammability: 0</i>	<i>Flammability: 0</i>	<i>Flammability: 0</i>	<i>Flammability: 0</i>	<i>Flammability: 0</i>
<i>Physical hazards: 0</i>	<i>Physical hazards: 0</i>	<i>Physical hazards: 0</i>	<i>Physical hazards: 0</i>	<i>Physical hazards: 0</i>	<i>Physical hazards: 0</i>

NFPA Rating:

Component A:	Component B:	Component C:	Component D:	Component E:	Component F:
<i>Health hazard: 0</i>	<i>Health hazard: 0</i>	<i>Health hazard: 0</i>	<i>Health hazard: 0</i>	<i>Health hazard: 1</i>	<i>Health hazard: 2</i>
<i>Fire: 2</i>	<i>Fire: 0</i>	<i>Fire: 0</i>	<i>Fire: 0</i>	<i>Fire: 0</i>	<i>Fire: 0</i>
<i>Reactivity hazard: 0</i>	<i>Reactivity hazard: 0</i>	<i>Reactivity hazard: 0</i>	<i>Reactivity hazard: 0</i>	<i>Reactivity hazard: 0</i>	<i>Reactivity hazard: 0</i>

AnaSpec Inc.

34801 Campus Drive, Fremont, CA 94555

Toll-Free: 800-452-5530 • Tel: 510-791-9560 • Fax: 510-791-9573

3. Composition / Information on Ingredients*Ingredients/Components:*

<i>Chemical Name:</i>	<i>Description</i>	<i>CAS Number:</i>
Component A	Contains DMSO	67-68-5
Component B	Contains dH2O	N/A
Component C	GSH Reductase	N/A
Component D	Contains dH2O	N/A
Component E	Contains Dihydrogen Potassium Phosphate	7778-77-0
	Potassium Hydroxide	1310-58-3
Component F	5-Sulphosalicylic acid dihydrate	5965-83-3

AnaSpec Inc.

34801 Campus Drive, Fremont, CA 94555

Toll-Free: 800-452-5530 • Tel: 510-791-9560 • Fax: 510-791-9573

4. First Aid Measures**General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Component A

Inhalation: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

Ingestion: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Skin: Wash off with soap and plenty of water. Consult a physician.

Eyes: Flush eyes with water as a precaution.

Component B, C and D

Inhalation: Move subject to fresh air. If breathing is difficult, give oxygen. Give artificial respiration if breathing has stopped. Get prompt medical attention.

Ingestion: Do NOT induce vomiting. If swallowed, wash out mouth with water if subject is conscious. Immediately consult a physician. Never give anything by mouth to an unconscious person.

Skin: Remove contaminated clothing. Wash skin thoroughly with soap and water. Consult a physician.

Eyes: Immediately flush eyes with large amount of water for at least 15 minutes. Consult a physician.

Component E

Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.

Ingestion: Never give anything by mouth to an unconscious person. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water. Wash mouth out with water. Get medical aid if irritation or symptoms occur.

Skin: Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. Wash clothing before reuse.

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation develops, get medical aid.

Component F

Inhalation: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

Ingestion: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Skin: Wash off with soap and plenty of water. Consult a physician.

Eyes: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

AnaSpec Inc.

34801 Campus Drive, Fremont, CA 94555

Toll-Free: 800-452-5530 • Tel: 510-791-9560 • Fax: 510-791-9573

5. Fire Fighting Measures	
<i>Extinguishing media:</i>	<p>Component A: For small fires, use alcohol resistant foam, dry chemical, or carbon dioxide. For large fires, use water spray from a safe distance.</p> <p>Component B, C and D: None</p> <p>Component E: Substance is noncombustible; use agent most appropriate to extinguish surrounding fire. Cool containers with flooding quantities of water until well after fire is out. Use water spray, dry chemical, carbon dioxide, or appropriate foam.</p> <p>Component F: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.</p>
<i>Special firefighting procedures:</i>	<p>Component A: Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.</p> <p>Component B, C and D: None</p> <p>Component E: Not applicable</p> <p>Component F: Wear self contained breathing apparatus for fire fighting if necessary.</p>
<i>Unusual fire and explosions hazards:</i>	<p>Component A: Combustible liquid and vapor. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas. Hazardous carbon oxides and sulphur oxides formed under fire conditions.</p> <p>Component B, C and D: None</p> <p>Component E: Not available</p> <p>Component F: Hazardous decomposition products formed under fire conditions.</p>
6. Accidental Release Measures	
<i>Containment and spill response</i>	<p>Component A: Immediately contact emergency personnel. Prevent further leakage or spillage if safe to do so. Avoid breathing vapors or mist. Remove all sources of ignition and provide ventilation. Collect with an electrically protected vacuum cleaner, by wet-brushing, or by absorbing with vermiculite, sand or earth, and place in appropriate container for disposal. Do not let material enter drains.</p> <p>Component B, C and D: None</p> <p>Component E: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Provide ventilation.</p> <p>Component F: Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.</p>

AnaSpec Inc.

34801 Campus Drive, Fremont, CA 94555

Toll-Free: 800-452-5530 • Tel: 510-791-9560 • Fax: 510-791-9573

<i>PPE</i>	Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
------------	---

7. Handling and Storage

Component A:

Handling: Wash thoroughly after handling. Remove and wash any contaminated clothing. Keep container tightly closed and avoid contact with eyes, skin, and clothing. Use with adequate ventilation and avoid ingestion and inhalation. Keep away from heat and flame.

Storage: Store in a tightly closed container away from moisture, heat, and flame. Store away from incompatible substances. Storage under a nitrogen blanket has been recommended.

Component B, C and D: Store at -20 °C

Component E:

Handling: Wash thoroughly after handling. Wash hands before eating. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Use with adequate ventilation.

Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. No special precautions indicated.

Component F: Keep container tightly closed in a dry and well-ventilated place.

8. Exposure Controls / Personal Protection

<i>Engineering controls</i>	<p>Component A: Facilities storing and using this material should be equipped with a safety shower and eyewash station. Adequate ventilation should also be present.</p> <p>Component B, C and D: None</p> <p>Component E: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.</p> <p>Component F: Facilities storing and using this material should be equipped with a safety shower and eyewash station. Adequate ventilation should also be present.</p>
-----------------------------	--

<i>PPE</i>	<p>Component A:</p> <p><i>Respiratory System:</i> A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.</p> <p><i>Skin and Body:</i> Wear appropriate work uniform or laboratory coat to prevent skin exposure.</p> <p><i>Hands:</i> Use chemical resistant, impervious gloves. Appropriate techniques should be used to remove potentially contaminated gloves.</p> <p><i>Eyes:</i> Wear chemical splash goggles.</p> <p>Component B, C and D: None</p> <p>Component E:</p> <p><i>Eyes:</i> Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard</p>
------------	--

AnaSpec Inc.

34801 Campus Drive, Fremont, CA 94555

Toll-Free: 800-452-5530 • Tel: 510-791-9560 • Fax: 510-791-9573

EN166.
Skin: Glove protection is not normally required.
Clothing: Protective garments not normally required.
Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
Component F:
Respiratory protection: For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. 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.
Full contact:
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)
Splash contact:
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)
Eye protection:
Safety glasses with side-shields conforming to EN166 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.

9. Physical and Chemical Properties

<i>Physical State</i>	Liquid
<i>Odo</i>	Not determined
<i>Solubility in Water</i>	Soluble
<i>Specific Gravity</i>	Not determined
<i>pH</i>	Component E - 7.5
<i>Boiling Point</i>	Component E: > 100 deg C Component A, B, C, D and F: Not determined

AnaSpec Inc.

34801 Campus Drive, Fremont, CA 94555

Toll-Free: 800-452-5530 • Tel: 510-791-9560 • Fax: 510-791-9573

<i>Melting Point</i>	Not determined
<i>Flash Point</i>	Not determined
<i>Vapor Pressure:</i>	Not determined
<i>Vapor Density:</i>	Not determined
<u>10.Stability and Reactivity</u>	
<i>Thermal Decomposition</i>	Stable under recommended storage conditions
<i>Dangerous Products of Decomposition</i>	Component E: Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide. Component F: Hazardous decomposition products formed under fire conditions. - Carbon oxides, Sulphur oxides Component A, B, C, D and E: N/A
<i>Dangerous Reactions</i>	No dangerous reactions known.
<u>11.Toxicological Information</u>	
<i>RTECS Number</i>	Component E: TC6615500 Component A, B, C, D and F: N/A
<i>Toxicity</i>	Component A contains DMSO: <i>For DMSO</i> Oral LD50 LD50 Oral - rat - 14,500 mg/kg Inhalation LC50 LC50 Inhalation - rat - 4 h - 40250 ppm Dermal LD50 LD50 Dermal - rabbit - > 5,000 mg/kg
<i>Health Hazards</i>	May cause skin irritation. May cause eye irritation. May be harmful if swallowed May be harmful if absorbed through skin.
<i>Potential Hazards</i>	Component F: May be harmful if inhaled. Causes respiratory tract irritation. Component A, B, C, D and E: N/A
<i>Carcinogenicity:</i>	Not listed by NTP, IARC, or OSHA
<i>OSHA Permissible Exposure Limit(PEL) Data</i>	Not identified
<i>ACGIH Threshold Limit Values (TLV)</i>	Not identified
<u>12. Ecological Information</u>	

AnaSpec Inc.

34801 Campus Drive, Fremont, CA 94555

Toll-Free: 800-452-5530 • Tel: 510-791-9560 • Fax: 510-791-9573

Component A contains DMSO:

For Dimethyl sulfoxide (DMSO) CAS-No. 67-68-5

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

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

PBT and vPvB assessment

No data available

Other adverse effects

No data available

Component B, C, D and E: Do not allow product to reach ground water, watercourse, or sewage system.**Component F:** N/A**13. Disposal Considerations****Component A:**

For Dimethyl sulfoxide (DMSO) CAS-No. 67-68-5

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company.

Component B, C and D: Consult local, state, or national regulations for proper disposal.**Component E:** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.**Component F:** Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.**Contaminated packaging**

Dispose of as unused product.

14. Transport Information: IATA Exempted quantities labeling

<i>UN Number</i>	N/A
<i>Hazard Class</i>	N/A
<i>Identification Number</i>	N/A
<i>Packing Group</i>	N/A
<i>Proper Shipping Name (DOT)</i>	N/A

AnaSpec Inc.

34801 Campus Drive, Fremont, CA 94555

Toll-Free: 800-452-5530 • Tel: 510-791-9560 • Fax: 510-791-9573

<u>15. Regulatory information</u>	
<i>California Proposition 65:</i>	Not Listed
<i>US TSCA (Toxic Substance Control Act):</i>	Component A: Listed Component B: Not listed Component C: Not listed Component D: Not listed Component E: Listed Component F: Not listed
<i>US CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):</i>	Component A: Listed Component B: Not listed Component C: Not listed Component D: Not listed Component E: Not listed Component F: Not listed
<i>US SARA Title III</i>	Component A SARA 302 components: N/A SARA 313 components: N/A SARA 311/312 Hazards: Fire Hazard, Chronic Health Hazard Component B, C and D: Not listed Component E: N/A Component F SARA 302 components: N/A SARA 313 components: N/A SARA 311/312 Hazards: Acute Health Hazard
<i>US Clean Air Act:</i>	Components A, B, C, D, E and F: Listed under Hazardous Air Pollutants: Not listed Listed under Class 1 Ozone Depletors: Not listed Listed under Class 2 Ozone Depletors: Not listed
<i>US Clean Water Act:</i>	Components A, B, C, D and F: Listed under “Hazardous Substances”: Not listed Listed under “Priority Pollutants”: Not listed Listed under “Toxic Pollutants”: Not listed Component E: Potassium Hydroxide listed as a Hazardous Substance under the CWA.

AnaSpec Inc.

34801 Campus Drive, Fremont, CA 94555

Toll-Free: 800-452-5530 • Tel: 510-791-9560 • Fax: 510-791-9573

US States: Right-to-Know: Listed in the following States:

Component A	Component B	Component C	Component D	Component E	Component F
Pennsylvania Revision Date 2007-03-01	N/A	N/A	N/A	California	Pennsylvania CAS-No. 5965-83-3
New Jersey Revision Date 2007-03-01	N/A	N/A	N/A	Pennsylvania	New Jersey CAS-No. 5965-83-3
N/A	N/A	N/A	N/A	New Jersey	N/A

European/International Regulations:

	Component A	Component B	Component C	Component D	Component E	Component F
<i>EC EINICS</i>	200-664-3	N/A	N/A	N/A	231-913-4	202-555-6
<i>EC Risk statements</i>	36/37/38	N/A	N/A	N/A	N/A	22-36/37/38-34
<i>WGK</i>	1	N/A	N/A	N/A	1	3
<i>Canada- DSL/NDSL</i>	Listed	Not listed	Not listed	Not listed	Listed	Listed
<i>Canada- WHMIS classification</i>	D2B	N/A	N/A	N/A	N/A	D2B
<i>Canada- Canadian Ingredient Disclosure List</i>	Listed	Not Listed	Not Listed	Not Listed	Listed	Not listed

16. Other Information

It is not intended for food, drug, household, agricultural or cosmetic use. A technically qualified individual experienced in handling potentially hazardous chemicals must supervise its use. The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. Users should make independent decisions regarding completeness of the information based on all sources available. AnaSpec shall not be held liable for any damage resulting from handling or from contact with the above product.

AnaSpec Inc.

34801 Campus Drive, Fremont, CA 94555

Toll-Free: 800-452-5530 • Tel: 510-791-9560 • Fax: 510-791-9573