Safety Data Sheet (SDS)

Revision Number: 1.1	*Last updated: April 2015*

1. Product and Company Identification

Product Name:	**SensoLyte® 490 HCV Protease Assay Kit * Fluorimetric***
Manufacturer/Supplier:	AnaSpec, Inc. www.anaspec.com 34801 Campus Drive Fremont, CA 94555 Tel: 510-791-9560 Fax: 510-791-9572 Email: service@anaspec.com
Catalog Number	71126
Unit Size	1 kit

2. Hazards Identification

Emergency Overview:

GHS Hazard Classification:

GHS Physical Hazards

Component A and B: Flammable liquid (Category 4)
Component C: Irritant (Category 3)
Component D: Acute toxicity, Oral (Category 4)
Acute toxicity, Dermal (Category 3)
Skin irritation (Category 2)
Eye irritation (Category 2A)
Specific target organ toxicity - single exposure (Category 3)
Acute aquatic toxicity (Category 2)
Component E: Acute toxicity, Oral (Category 5)
Skin irritation (Category 2)
Eye irritation (Category 2A)
Component F: N/A

GHS Health and Environmental Hazards

Component A, B and F: Irritant to eyes and skin
Component C: Irritant to eyes and skin, mutagen, toxin
Component D: Target organ effect, harmful by ingestion, toxic by skin absorption, irritant
Component E: Target organ effect, toxic by ingestion, irritant

GHS Signal Words:

Component A, B, C and E: Warning
Component D: Danger
Component F: N/A

GHS Hazard Statements:

Component A and B: H227 Combustible liquid
Component C: H315 Causes skin irritation
H319 Causes serious eye irritation
H335 May cause respiratory irritation
Component D: H302 Harmful if swallowed.
H311 Toxic in contact with skin.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H401 Toxic to aquatic life.
Component E: H303 May be harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
Component F: N/A

GHS Precautionary Statements:

Component A, B and F: None
Component C: P305 + P351 +P338 IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
Component D: P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P280 Wear protective gloves/ protective clothing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
P312 Call a POISON CENTER or doctor/ physician if you feel unwell.
Component E: P305 + P351 + P338 IF IN EYES: Rinse cautiously with water.
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:**
Health hazard: 0	*Health hazard:* 0	*Health hazard: 2*	*Health hazard: 2*	*Health hazard: 2*	*Health hazard: 1*
Flammability: 2	*Flammability:* 2	*Flammability: 1*	*Flammability: 3*	*Flammability: 1*	*Flammability: 0*
Physical hazards: 0	*Physical hazards:* 0	*Physical hazards:* 0	*Physical hazards:* 3	*Physical hazards: 0*	*Physical hazards: 0*

NFPA Rating:

Component A:	**Component B:**	**Component C:**	**Component D:**	**Component E:**	**Component F:**
Health hazard: 0	*Health hazard:* 0	*Health hazard: 2*	*Health hazard: 2*	*Health hazard: 2*	*Health hazard: 0*
Fire: 2	*Fire:* 2	*Fire: 1*	*Fire: 3*	*Fire: 1*	*Fire: 0*
Reactivity hazard: 0	*Reactivity hazard:* 0	*Reactivity hazard:* 0	*Reactivity hazard:* 3	*Reactivity hazard: 0*	*Reactivity hazard: 0*

3. Composition / Information on Ingredients

Ingredients/Components:

Chemical Name:	*Description*	*CAS Number:*
Component A	Contains DMSO	67-68-5
Component B	Contains DMSO	67-68-5
Component C	Proprietary	NA
Component D	Proprietary	NA
Component E	Contains DTT	16096-97-2
Component F	Pep4AK	NA

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

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 C

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.

Component D

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. Take victim immediately to hospital. Consult a physician.
Eyes: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Component E

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.

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.

5. Fire Fighting Measures

Extinguishing media:	**Component A and B:** For small fires, use alcohol resistant foam, dry chemical, or carbon dioxide. For large fires, use water spray from a safe distance. **Component C, D and F:** Not applicable **Component E:** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Special firefighting procedures:	**Component A and B:** Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear. **Component C, D and F:** Not applicable **Component E:** Wear self-contained breathing apparatus for firefighting if necessary.
Unusual fire and explosions hazards:	**Component A and B:** 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. **Component C:** Hazardous carbon oxide, nitrous oxide, and sulphur oxide products are formed under fire conditions. **Component D and F:** Not applicable **Component E:** Hazardous carbon oxide and sulphur oxide products are formed under fire conditions.

6. Accidental Release Measures

Containment and spill response	**Component A and B:** 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. **Component C:** Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal. **Component D:** Contain spillage and collect with an electrically protected vacuum cleaner or wet brush. Keep in suitable, closed container for disposal. **Component E:** Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal. Do not let product enter drains. **Component F:** Sweep up the liquid. Do not let product enter drains.
PPE	Use personal protective equipment

7 . Handling and Storage

Component A and B

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 C

Handling: Avoid contact with skin and eyes. Avoid inhalation of vapor or mist.

Storage: Store in a tightly closed container in a dry, well-ventilated area.
Component D:
Handling: Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Take measures to prevent the build up of electrostatic charge.
Storage: Store in a tightly closed container in a dry, well-ventilated area.
Component E:
Handling: Avoid contact with skin and eyes. Avoid inhalation of vapor or mist.
Storage: Store in a tightly closed container in a cool, well-ventilated area. Containers that are opened must be carefully resealed and kept upright to prevent leakage.
Component F: Avoid contact with skin and eyes. Store in a tightly closed container.

8. Exposure Controls / Personal Protection

Engineering controls	**Component A and B:** Facilities storing and using this material should be equipped with a safety shower and eyewash station. Adequate ventilation should also be present. **Component C:** Facilities storing and using this material should be equipped with a safety shower and eyewash station. Adequate ventilation should also be present. **Component D:** Contain spillage and collect with an electrically protected vacuum cleaner or wet brush. Keep in suitable, closed container for disposal. **Component E:** Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit. **Component F:** Facilities storing and using this material should be equipped with a safety shower and eyewash station. Adequate ventilation should also be present.
PPE	**Component A and B** *Respiratory System:* 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. *Skin and Body:* Wear appropriate work uniform or laboratory coat to prevent skin exposure. *Hands:* Use chemical resistant, impervious gloves. Appropriate techniques should be used to remove potentially contaminated gloves. *Eyes:* Wear chemical splash goggles. **Component C** *Respiratory System:* If necessary, 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). *Skin and Body:* Wear appropriate work uniform or laboratory coat to prevent skin exposure. *Hands:* Use chemical resistant, impervious gloves. Appropriate techniques should be used to remove potentially contaminated gloves. Wash and dry hands. *Eyes:* Handle with 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). **Component D:** *Respiratory System:* If necessary, use a full-face particle respirator type N100 (US) or type P3 (EN 143) 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). *Skin and Body:* Wear appropriate work uniform or laboratory coat to prevent skin exposure.

	Hands: Use chemical resistant, impervious gloves. Appropriate techniques should be used to remove potentially contaminated gloves. Wash and dry hands. *Eyes:* Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). **Component E:** *Respiratory System:* If necessary, 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). *Skin and Body:* Wear appropriate work uniform or laboratory coat to prevent skin exposure. *Hands:* Use chemical resistant, impervious gloves. Appropriate techniques should be used to remove potentially contaminated gloves. Wash and dry hands. *Eyes:* Use 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). **Component F:** Wear appropriate chemical-resistant gloves, safety goggles and protective clothing.

9. Physical and Chemical Properties

Physical State	Liquid
Odo	Not determined
Solubility in Water	Soluble
Specific Gravity	Not determined
pH	Component C –7.5
Boiling Point	Not determined
Melting Point	Not determined
Flash Point	Not determined
Vapor Pressure:	Not determined
Vapor Density:	Not determined

10.Stability and Reactivity

Thermal Decomposition	Not applicable
Dangerous Products of Decomposition	**Component A and B:** Hazardous carbon oxides and sulphur oxides formed under fire conditions. **Component C:** Hazardous carbon oxides, nitrous oxides, and sulphur oxides formed under fire conditions. **Component E:** Hazardous carbon oxide and sulphur oxide products are formed under fire conditions. **Component F:** NA
Dangerous Reactions	Not Applicable

11.Toxicological Information

RTECS Number	**Component A:** PV6210000 **Component B:** PV6210000 **Component C:** Proprietary **Component D:** Proprietary **Component E:** EK1610000 **Component F:** NA

Toxicity	***Component A and Component B contain DMSO.*** **For DMSO** 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 **Component C** LD50 Oral –mouse - 2,900 mg/kg LD50 Oral – rabbit - 5 g/kg LD50 Dermal – rabbit - >10,000 mg/kg **Component D** LD50 Oral – rat - 1,288 mg/kg LC50 Inhalation – rat – 1 h - >3,900 mg/m3 LD50 Dermal – rabbit - 580 mg/kg **Component E and F** Not available
Health Hazards	No data available
Potential Hazards	**Potential Health Effects** **Component C** *Inhalation:* May be harmful if inhaled. Causes respiratory tract irritation. *Skin:* May be harmful if absorbed through skin. Causes skin irritation.. *Eyes:* Causes eye irritation. *Ingestion:* May be harmful if swallowed. *Target Organs:* Kidney, Liver **Component D** *Inhalation***:** May be harmful if inhaled. Causes respiratory tract irritation. *Ingestion* **:** Harmful if swallowed. *Skin:* Toxic if absorbed through skin. Causes skin irritation. *Eyes:* Causes eye irritation. **Component E** *Inhalation:* May be harmful if inhaled. Causes respiratory tract irritation. *Ingestion:* Toxic if swallowed. *Skin:* May be harmful if absorbed through skin. Causes skin irritation. *Eyes:* Causes eye irritation. **Component F** *Inhalation:* May be harmful if inhaled. Causes respiratory tract irritation. *Skin:* May be harmful if absorbed through skin. Causes skin irritation. *Eyes:* Causes eye irritation. *Ingestion:* May be harmful if swallowed.
Carcinogenicity:	No data available
OSHA Permissible Exposure Limit(PEL) Data	No data available
ACGIH Threshold Limit Values (TLV)	No data available

12. Ecological Information

For Dimethyl sulfoxide (DMSO) CAS-No. 67-68-5 (Component A and B)
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 C, E and F
No data available

Component D
Toxicity
Toxicity to fish mortality NOEC - Oncorhynchus mykiss (rainbow trout) - 19.5 mg/l - 96 h
mortality LOEC - Pimephales promelas (fathead minnow) - 4.6 mg/l - 8 d
LC50 - Oncorhynchus mykiss (rainbow trout) - 3.6 mg/l - 96 h
Toxicity to algae Growth inhibition LOEC - Pseudokirchneriella subcapitata - 2.68 mg/l - 6 d
Persistence and degradability
No data available
Bioaccumulative potential
Bioaccumulation Cyprinus carpio (Carp) - 72 h
Bioconcentration factor (BCF): 3.9 - 5.3
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.
Toxic to aquatic life.

13. Disposal Considerations

For Dimethyl sulfoxide (DMSO) CAS-No. 67-68-5 (Component A and B)
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.

Contaminated packaging
Dispose of as unused product.

For Component C
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

For Component D
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. 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.

For Component E
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.

For Component F
Contaminated packaging
Dispose of as unused product.

14. Transport Information:

UN Number	N/A
Hazard Class	N/A
Packing Group	N/A
Proper Shipping Name (DOT)	N/A

15. Regulatory information

California Proposition 65:	All components are not listed
US TSCA (Toxic Substance Control Act):	All components are listed
US CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):	**Component A and B:** 261.33 8(d). **Component C, D, E and F :** Not listed
US SARA Title III	**Component A and B** SARA 302 components: N/A SARA 313 components: N/A SARA 311/312 Hazards: Fire Hazard, Chronic Health Hazard **Component C** SARA 302 components: N/A SARA 313 components: N/A SARA 311/312 Hazards: Chronic Health Hazard **Component D** SARA 302 components: N/A SARA 313 components: N/A SARA 311/312 Hazards: Fire Hazard, Acute Health Hazard, Chronic Health Hazard **Component E** SARA 302 components: N/A SARA 313 components: N/A SARA 311/312 Hazards: Acute Health Hazard, Chronic Health Hazard **Component F** SARA 302 components: N/A SARA 313 components: N/A SARA 311/312 Hazards:N/A
US Clean Air Act:	**Component 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
US Clean Water Act:	**Component A, B, C, D, E and F** Listed under "Hazardous Substances": Not listed Listed under "Priority Pollutants": Not listed Listed under "Toxic Pollutants": Not listed

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	Pennsylvania Revision Date 2007-03-01	Pennsylvania Revision Date 2007-03-01	N/A	N/A	N/A
New Jersey Revision Date 2007-03-01	New Jersey Revision Date 2007-03-01	New Jersey Revision Date 2007-03-01	N/A	N/A	N/A
N/A	*N/A*	Massachusetts Revision Date 2007-03-01	N/A	N/A	N/A

European/International Regulations:

	Component A	**Component B**	**Component C**	**Component D**	**Component E**	**Component F**
EC EINICS	200-664-3	200-664-3	N/A	205-788-1	222-468-7	NA
EC Risk statements	36/37/38	36/37/38	N/A	36/37/38-36/38-22-11-21/22-42-41-20/21/22	22/36/37/38	NA
WGK	1	1	1	2	3	NA
Canada-DSL/NDSL	Listed	Listed	Not listed	Listed	Listed	Not listed
Canada-WHMIS classification	D2B	D2B	D2B	D2B	D2B, D1B	NA
Canada-Canadian Ingredient Disclosure List	Listed	Listed	Listed	Not Listed	Not 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.