SAFETY DATA SHEET

Cat# BN00935 Global Protein Synthesis Assay Kit (FACS/Microscopy), Red Fluorescence

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **Global Protein Synthesis Assay Kit (FACS/Microscopy), Red Fluorescence**

PRODUCT CODES: **Cat# BN00935**

MANUFACTURER: **Assay Genie (brand of Reagent Genie Ltd.)**

ADDRESS: **G1 The Steelworks, Foley Street, Dublin 1**

EMERGENCY PHONE: **+353 1 8879802**

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

Component	Description	Volume	Safety Information
Wash Buffer (10X)	Liquid	25 ml	No hazards
Fixative Solution	Solution (contains Formaldehyde)	10 ml	See below
Permeabilization Buffer (10X)	Liquid	25 ml	No hazards
Protein Label (400X)	Liquid	125 µl	No hazards
Copper Reagent (500X)	Solution (contains Copper Reagent)	100 µl	See below
Fluorescent Azide (100X)	Liquid	250 µl	No hazards
Reducing Agent (20X)	Liquid	1.25 ml	No hazards
Cycloheximide (100X)	In DMSO	100 µl	See below

Copper Reagent:
Emergency Overview
GHS Classification: Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410
GHS Label elements, including precautionary statements
Pictogram:

Signal word: Warning
Hazard statement(s): H410 Very toxic to aquatic life with long lasting effects.
Precautionary statement(s): P273 Avoid release to the environment.
P391 Collect spillage.
P501 Dispose of contents/ container to an approved waste disposal plant.
HMIS Classification
- **Health hazard**: 2
- **Fire hazard**: *
- **Flammability**: 0
- **Physical hazards**: 0

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

Potential Health Effects
- **Inhalation:** Toxic if inhaled. Causes respiratory tract irritation.
- **Skin:** Toxic if absorbed through skin. Causes skin irritation.
- **Eyes:** Causes eye irritation.
- **Ingestion:** Toxic if swallowed.

Formaldehyde:
Emergency Overview
OSHA Hazards: Target organ effect, Toxic by ingestion, Toxic by skin absorption, Skin and respiratory sensitizer, Corrosive, Carcinogen

Target Organs: Eyes, Kidney, Liver, Heart

GHS Classification:
Acute toxicity, Oral (Category 3)
Acute toxicity, Dermal (Category 3)
Serious eye damage (Category 1)
Skin irritation (Category 2)
Respiratory sensitization (Category 1)
Skin sensitization (Category 1)
Carcinogenicity (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.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H351 Suspected of causing cancer.
H402 Harmful to aquatic life.

Precautionary statement(s):
P261 Avoid breathing dust/fumes/gas/mist/vapors/spray.
P264 Wash hands thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P311 Call a POISON CENTER or doctor/physician.

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

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

Potential Health Effects

Inhalation: May be harmful 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.

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 the skin and may carry such materials into the body.

SECTION 3: HAZARDS IDENTIFICATION

Component	CAS Number	EC-No.	Molecular Weight	Chemical Formula
Copper Reagent	--	--	--	--
Formaldehyde	50-00-0	200-001-8	30.03	HCHO
DMSO	67-68-5	200-664-3	78.13	C2H6OS

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

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 combustion products formed under fire conditions – no data available.
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

Formaldehyde:

Components	CAS-No.	Value	Control parameters	Basis
Formaldehyde	50-00-0	C	0.3 ppm	USA. ACGIH Threshold Limit Values (TLV)
Remarks:	Eye & upper respiratory tract irritation. Suspected human carcinogen. Sensitizer Substance listed, for more information see OSHA document 1910.1048 See 1910.1048			
		TWA	0.016 ppm	USA. NIOSH Recommended Exposure Limits
	Potential occupational carcinogen. See Appendix A, 15 minutes ceiling value.			
		C	0.1 ppm	USA. NIOSH Recommended Exposure Limits
	Potential occupational carcinogen. See Appendix A, 15 minutes ceiling value.			

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

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

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	Copper Reagent	Formaldehyde	DMSO
Appearance:	blue liquid	Clear liquid	Clear liquid
pH:	No data available	No data available	No data available
Water Solubility:	No data available	No data available	Completely miscible
Other Solubility:	No data available	No data available	No data available
Boiling Point (°C):	No data available	No data available	189 ºC (372 ºF)
Melting Point (°C):	No data available	No data available	16-19 ºC (61-66 ºF)
Flash Point (°C):	No data available	No data available	87 ºC (189 ºF)
Ignition Temperature (°C):	No data available	No data available	301 ºC (574 ºF)
Density:	No data available	No data available	1.1 g/ml

SECTION 10: STABILITY AND REACTIVITY

Property	Copper Reagent	Formaldehyde	DMSO
Chemical stability:	Stable under recommended storage conditions		
Conditions to avoid:	No data available	No data available	Heat, Flames, Sparks
Materials to avoid:	Powdered metals, Anhydrous copper(II) sulfate, reacts violently with:, hydroxylamine, Magnesium	Strong oxidizing agents	Acid chlorides, Phosphorus halides, Strong acids, Strong oxidizing agents, Strong reducing agents
Hazardous decomposition products:	No data available	Carbon oxides	Carbon oxides, sulfur oxides

SECTION 11: TOXICOLOGICAL INFORMATION

Copper Reagent:

Acute toxicity: no data available
Skin corrosion/irritation: no data available
Serious eye damage/eye irritation: no data available
Respiratory or skin sensitization: no data available
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
Teratogenicity: no data available
Specific target organ toxicity – single exposure (GHS): Causes damage to organs.
Specific target organ toxicity – repeated exposure (GHS): no data available
Potential Health Effects
Inhalation: Toxic if inhaled. Causes respiratory tract irritation.
Skin: Toxic if absorbed through skin. Causes skin irritation.
Eyes: Causes eye irritation.
Ingestion: Toxic if swallowed.
Signs and Symptoms of Exposure: no data available
Additional information: no data available
RTECS: no data available

Formaldehyde:
Acute toxicity: no data available
Skin corrosion/irritation: no data available
Serious eye damage/eye irritation: Eyes: no data available
Respiratory or skin sensitization: no data available
Germ cell mutagenicity: no data available
Carcinogenicity:
IARC: 1 - Group 1: Carcinogenic to humans (Formaldehyde)
NTP: Reasonably anticipated to be a human carcinogen (Formaldehyde)
Reproductive toxicity: no data available
Teratogenicity: no data available
Specific target organ toxicity - single exposure (Globally Harmonized System): no data available
Specific target organ toxicity - repeated exposure (Globally Harmonized System): no data available
Aspiration hazard: no data available
Potential Health Effects
Inhalation: May be harmful 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: Exposure may cause burning sensation, cough, wheezing, laryngitis, shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

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: Skin – rabbit – no skin irritation – 4h
Serious eye damage/eye irritation: Eyes – rabbit – mild eye irritation
Respiratory or 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
Carcinogenicity: Carcinogenicity – rat – Oral Tumorigenic: equivocal tumorigenic agent by RTECS criteria. Skin and appendages: other: tumors.
Carcinogenicity – mouse – Oral Tumorigenic: equivocal tumorigenic agent by RTECS criteria. Leukemia skin and 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: post-implantation mortality (e.g. reduction in number of implants per female; total number of implants per corpora lutea). Effects on embryo/fetus: Fetotoxicity (except death, e.g. stunted fetus). Specific developmental abnormalities: musculoskeletal system.
Teratogenicity: Developmental toxicity – mouse – Intraperitoneal: Effects on embryo/fetus: Fetotoxicity (except death, e.g. stunted fetus). Specific developmental abnormalities: musculoskeletal system
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
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.
Signs and Symptoms of Exposure: Effects due to ingestion may include: nausea, fatigue, and/or headache.
Additional information: RTECS: PV6210000

SECTION 12: ECOLOGICAL INFORMATION

Persistence and degradability: no data available
Toxicity: 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

SECTION 13: DISPOSAL CONSIDERATIONS

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

SECTION 14: TRANSPORT INFORMATION

Copper Reagent:
DOT (US): UN-number: 3082, Class: 9, Packing group: III; Proper shipping name: Copper Reagent; Reportable Quantity (RQ): 400 lbs.; Marine pollutant: No; Poison inhalation hazard: No
IMDG: UN-number: 3082, Class: 9, Packing group: III; EMS-No: F-E, S-D; Proper shipping name: COPPER REAGENT; Marine pollutant: No
IATA: UN-number: 3082, Class: 9, Packing group: III; Proper shipping name: Copper Reagent

Formaldehyde:
DOT (US): UN number: 2209, Class: 8, Packing group: III; Proper shipping name: Formaldehyde solutions; Reportable Quantity (RQ): 200 lbs; Marine pollutant: No; Poison Inhalation Hazard: No
IMDG: UN number: 2209, Class: 8, Packing group: III; EMS-No: F-A, S-B; Proper shipping name: FORMALDEHYDE SOLUTION; Marine pollutant: No
IATA: UN number: 2209, Class: 8, Packing group: III; Proper shipping name: Formaldehyde solution

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

SARA 302 Components: SARA 302: The following components are subject to reporting levels established by SARA Title III, Section 302 Formaldehyde, CAS-No. 50-00-0; Revision Date: 2007-07-01
SARA 313 Components: The following components are subject to reporting levels established by SARA Title II, Section 313:
Copper Reagent, CAS-No. --; Revision Date: 2007-07-01
Formaldehyde, CAS-No. 50-00-0; Revision Date: 2007-07-01
SARA 311/312 Hazards:
Copper Reagent: Acute Health Hazard, Chronic Health Hazard

Formaldehyde: Acute Health Hazard, Chronic Health Hazard
Dimethyl sulfoxide: Fire Hazard, Chronic Health Hazard
Massachusetts Right To Know Components:
Copper Reagent, CAS-No. --; Revision Date: 2007-07-01
Formaldehyde, CAS-No. 50-00-0; Revision Date: 2007-07-01
Pennsylvania Right To Know Components:
Copper Reagent, CAS-No. --; Revision Date: 2007-07-01
Formaldehyde, CAS-No. 50-00-0; Revision Date: 2007-07-01
Dimethyl sulfoxide CAS-No. 67-68-5; Revision Date: 2007-03-01
New Jersey Right To Know Components:
Copper Reagent, CAS-No. --; Revision Date: 2007-07-01
Formaldehyde, CAS-No. 50-00-0; Revision Date: 2007-07-01
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 the State of California to cause cancer, birth defects, or any other reproductive harm.

EU regulations:

Component	Risk Phrases	Safety Phrases
Copper Reagent	R11, R23/24/25, R33	S16, S24/25, S36/37, S45
Formaldehyde	R24/25, R35, R40, R42/43	S26, S36/37/39, S45, S51
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. Assay Genie 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.