

1. Identification of Substance:

- **Other means of identification: Catalog Number:** NBP3-00400
- **GHS product identifier:** Human IgG ELISA Kit (Chemiluminescence)
- **Application of the substance / the preparation:** For Research Use Only
- **Manufacturer/Supplier:**
Novus Biologicals a Bio-Techne Brand
10771 E Easter Ave
Centennial, CO 80112 USA
- **For product related questions call:** 1-888-506-6887. In Europe call: +44(0)1235-529449. In Canada call 1-855-668-8722.
- **Emergency information:** In case of a chemical emergency, spill, fire, or exposure, call Novus Biologicals at (303) 730-1950 or (888)-506-6887. In Europe call +44(0)1235-529449. In Canada call 1-855-668-8722.

2. Hazard Identification:

- **Hazard Statement:** Classification according to GHS
Contains ProClin 300, N,N-Dimethylformamide(DMF), Sodium tetraphenylboron, Carbamide Peroxide (CP)
- **Pictogram:**
- **Signal Word:** WARNING
- **Hazard statements:**



ProClin 300

H317: May cause an allergic skin reaction.

N,N-Dimethylformamide(DMF)

H315: Causes skin irritation.

H319: Causes serious eye irritation.

H332: Harmful if inhaled.

H335: May cause respiratory irritation.

Sodium tetraphenylboron

H315: Causes skin irritation.

H319: Causes serious eye irritation.

H335: May cause respiratory irritation

Carbamide Peroxide (CP)

H302: Harmful if swallowed.

H312: Harmful in contact with skin.

H332: Harmful if inhaled.

H335: May cause respiratory irritation.

- **Precautionary statements:**

ProClin 300

P261: Avoid breathing dust/fumes/gas/mist/vapours/spray.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P302+352: IF ON SKIN: Wash with plenty of soap and water.

P333+313: If skin irritation or rash occurs: Get medical advice/attention.

N,N-Dimethylformamide(DMF)

P261: Avoid breathing dust/fume/gas/mist/vapours/spray.

P264: Wash hands thoroughly after handling.

P271: Use only outdoors or in a well-ventilated area

P280: Wear protective gloves and protective clothing.

P302+352: IF ON SKIN: Wash with plenty of soap and water.

P304+P312: IF INHALED: Call a POISON CENTER or doctor/physician if you feel unwell.

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.

Sodium tetraphenylboron

P261: Avoid breathing dust/fume/gas/mist/vapours/spray.

P264: Wash hands thoroughly after handling.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P302+352: IF ON SKIN: Wash with plenty of soap and water.

P305 + P351 + P338: IF in eyes, rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Carbamide Peroxide (CP)

P264: Wash hands thoroughly after handling.

P270: Do not eat, drink or smoke when using this product.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P302+352: IF ON SKIN: Wash with plenty of soap and water.

Component Items	Physical form	Hazardous Ingredient	Concentration	CAS No.
Biotinylated Detection Ab	Odorless and colorless, liquid	Proclin 300	0.04%	96118-96-6
Assay diluent	Odorless and colorless, liquid	Proclin 300	0.04%	96118-96-6
HRP Conjugate	Odorless and colorless, liquid	Proclin 300	0.04%	96118-96-6
Standard	Odorless and white/faint yellow Clear powder/ solid	Proclin 300	0.04%	96118-96-6
Substrate A	Odorless and colorless, liquid	N,N-Dimethylformamide(DMF)	2%	68-12-2
		Sodium tetraphenylboron	0.05%	143-66-8
Substrate B	Odorless and colorless, liquid	Carbamide peroxide(CP)	0.05%	124-43-6

3. Information on Ingredients:

Ingredient	Percent	CAS No.	EC No.
Sodium chloride	0.8%	7647-14-5	231-598-3
Potassium chloride	0.02%	7447-40-7	231-211-8
Disodium phosphate dodecahydrate	0.12%	10039-32-4	231-448-7
Potassium dihydrogen phosphate	0.02%	7778-77-0	231-913-4
Tris	1%	77-86-1	201-064-4
EDTA	0.1%	60-00-4	200-449-4
Glycerol	5%	56-81-5	200-289-5
Tween20	0.5%	9005-64-5	500-018-3
BSA	1%	9048-46-8	--
Luminol	0.1%	521-31-3	208-309-4
Mannitol	2%	69-65-8	200-711-8
PVP40	0.35%	9003-39-8	--
Proclin 300	0.04%	96118-96-6	--
N,N-Dimethylformamide (DMF)	0.1%	68-12-2	200-679-5
Sodium tetraphenylborate	0.05%	143-66-8	205-605-5
Carbamide peroxide(CP)	0.05%	124-43-6	204-701-4
Water	88.75%	7732-18-5	231-791-2

4. First Aid Measures:

- **General advice:** Consult a physician. Show this safety data sheet to the doctor in attendance.
- **After inhalation:** If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
- **After skin contact:** Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.
- **After eye contact:** Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
- **After swallowing:** Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. Fire Fighting Measures:

- **Suitable extinguishing agents:** Suitable: Water spray, alcohol-resistant foam, dry chemical, carbon dioxide or appropriate foam. For small fires, use media such as "alcohol" foam, dry chemical or carbon dioxide. For large fires, apply water from as far as possible. Use large quantities of water applied as a mist or spray. Solid streams of water may be ineffective. Cool affected containers with flooding quantities of water.
- **Hazards from the substance or mixture:** Carbon oxides, Nitrogen oxides (NO_x), Sulphur oxides, Hydrogen chloride gas.
- **Special precautions for fire-fighters:** Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

6. Accidental Release Measures:

- **Person-related safety precautions:** Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas
- **Measures for environmental protection:** Prevent further leakage or spillage if safe to do so. Do not let enter drains. Discharge into the environment must be avoided.
- **Measures for containment and cleaning:** Contain spillage, and then collect with non-combustible absorbent material (eg. sand, diatomaceous earth, vermiculite). Place in a container for disposal according to local regulations. Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal. Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.
- **Additional information:** Not available.

7. Handling and Storage:

- **Precautions for safe handling:** Wear appropriate protective clothing and safety gloves. Avoid inhalation. Avoid contact with eyes, skin and clothing. Mechanical exhaust required. Keep away from ignition sources, heat and flame. No smoking at working site. Incompatibilities: Strong oxidizing agents, Strong acids. Handling and unloading should be light, to prevent packaging broken, damp and cause losses. Working place should be equipped with appropriate varieties and quantities of fire fighting equipment and leakage emergency treatment equipment.
- **Conditions for safe storage:** Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Keep away from heat, sparks and flame. Keep away from sources of ignition. Incompatible: Strong oxidizing agents, Strong acids. Storage place should be equipped with appropriate varieties and quantities of fire fighting equipment and leakage emergency treatment equipment.

8. Exposure Controls and Personal Protection:

- **Control parameters:** Not available.
- **Appropriate engineering controls** Mechanical exhaust required. Safety shower and eye bath.

- **Individual protection measures:** Wash hands thoroughly after handling chemical products and before eating, smoking or using the restroom. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing.

Eye/face protection: Wear approved safety goggles.

Skin/hand protection: Handle with protective gloves, plastic or rubber. 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.

Body protection: Wear suitable protective clothing as protection against splashing or contamination.

Other skin protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved.

Respiratory protection: In case of inadequate ventilation, use a suitable respirator. 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).

- **Other Protections:** No smoking, drinking and eating at working site. Wash thoroughly after handling.

9. Physical and Chemical Properties:

9.1 Proclin 300

▪ Appearance: Clear/Colorless Liquid	▪ Upper/lower flammability or explosive limits: Not available
▪ Odor: Not data available	▪ Vapor density : Not available
▪ Odor threshold: Not available	▪ Vapor pressure: Not available
▪ pH: 4.1 at 100 g/L	▪ Relative density: 1.03 g/cm ³
▪ Melting point/freezing point: -40° C	▪ Solubility in/Miscibility with Water: Soluble
▪ Boiling point/Boiling range: 189° C	▪ Partition coefficient: noctanol/water: Not available
▪ Flash point: 118° C – closed cup	▪ Auto igniting: Not available
▪ Evaporation rate: Not available	▪ Decomposition temperature: Not available
▪ Flammability (solid, gas): Not available	▪ Viscosity: Not available

9.2 N,N-Dimethylformamide(DMF)

▪ Appearance: Liquid Upper/lower	▪ Upper/lower flammability or explosive limits: Not available
▪ Odor: Not available	▪ Vapor density : Not available
▪ Odor threshold: Not available	▪ Vapor pressure: Not available
▪ pH: Not available	▪ Relative density: Not available
▪ Melting point/freezing point: Not available	▪ Solubility in/Miscibility with Water: Not available
▪ Boiling point/Boiling range: Not available	▪ Partition coefficient: noctanol/water: Not available
▪ Flash point: Not available	▪ Auto igniting: Not available
▪ Evaporation rate: Not available	▪ Decomposition temperature: Not available
▪ Flammability (solid, gas): Not available	▪ Viscosity: Not available

9.3 Sodium tetraphenylboron

▪ Appearance: White Solid	▪ Upper/lower flammability or explosive limits: Not available
▪ Odor: Not available	▪ Vapor density : Not available
▪ Odor threshold: Not available	▪ Vapor pressure: Not available
▪ pH: 8 at 50 g/L at 20 °C	▪ Relative density: Not available

▪ Melting point/freezing point: 300°C	▪ Solubility in/Miscibility with Water: 50 g/L at 20 °C - soluble
▪ Boiling point/Boiling range: Not available	▪ Partition coefficient: noctanol/water: Not available
▪ Flash point: Not available	▪ Auto igniting: Not available
▪ Evaporation rate: Not available	▪ Decomposition temperature: Not available
▪ Flammability (solid, gas): Not available	▪ Viscosity: Not available
▪ Oxidizing Properties: No data available	▪ Other: Bulk density 0.50 g/L

9.3 Carbamide Peroxide

▪ Appearance: White crystalline	▪ Upper/lower flammability or explosive limits: Not available
▪ Odor: Pungent	▪ Vapor density : Not available
▪ Odor threshold: Not available	▪ Vapor pressure: 23.3 mmHg at 30 °C
▪ pH: Not available	▪ Relative density: 1.390 g/cm ³ at 20 °C
▪ Melting point/freezing point: 90 - 93 °C - lit.	▪ Solubility in/Miscibility with Water: Not available
▪ Boiling point/Boiling range: Not available	▪ Partition coefficient: noctanol/water: Not available
▪ Flash point: Not available	▪ Auto igniting: Not available
▪ Evaporation rate: Not available	▪ Decomposition temperature: > 60 °C
▪ Flammability (solid, gas): Not available	▪ Viscosity: Not available
▪ Oxidizing Properties: The substance or mixture is classified as oxidizing with the category 3.	▪ Other: Bulk density 0.6 - 0.7 g/L

10. Stability and Reactivity:

- **Reactivity:** No data available
- **Chemical Stability:** Stable under recommended storage conditions
- **Possibility of Hazardous Reactions:** No data available
- **Conditions to avoid:** Heat, flames and sparks
- **Incompatible materials:** Strong oxidizing agent, Light sensitive, Alcohols, Organic materials, Heavy metals, Powdered metals, Strong reducing agents, Amines, Mercaptans.
- **Hazardous decomposition products:** Other decomposition products: No data available. Hazardous decomposition products formed under fire conditions: Carbon oxides, Nitrogen oxides (NOx), Sulphur oxides, Hydrogen chloride gas.

11. Toxicological Information:

11.1 Proclin 300

- **Acute toxicity**
LD₅₀ Oral - Rat - 862 mg/kg
LD₅₀ Dermal - Rabbit - 2,800 mg/kg
- **Skin corrosion/irritation**
Skin - Rabbit Result: Corrosive Serious eye damage/eye irritation
Eyes - Rabbit Result: Corrosive to eyes
- **Respiratory or skin sensitization** - Guinea pig Result: May cause sensitization by skin contact.
- **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.

11.2 N,N-Dimethylformamide(DMF)

- **Acute Toxicity**
LD₅₀ Oral - Rat - 2,800 mg/kg (N,N-Dimethylformamide)
LC₅₀ Inhalation - Rat - 4 h - 9 - 15 mg/L (N,N-Dimethylformamide)
LD₅₀ Dermal - Rabbit - 1,500 mg/kg (N,N-Dimethylformamide)
- **Skin** – Human (N,N-Dimethylformamide)

- Result: Mild skin irritation - 24 h
- **Serious eye damage/eye irritation:** No data available
- **Eyes – Rabbit (N,N-Dimethylformamide)**
Result: Moderate eye irritation
- **Mutation in mammalian somatic cells.**
- **Carcinogenicity:** This product is or contains a component that is not classifiable as to its classification (N,N-Dimethylformamide)
- **IARC: 3 - Group 3:** Not classifiable as to its carcinogenicity to humans (N,N-Dimethylformamide)

11.3 N Sodium tetraphenylboron

- **Acute Toxicity**
LD₅₀ Oral - Rabbit: 288 mg/kg
LC₅₀ lOral - Rat - 288 mg/kg

11.4 Carbamide Peroxide

- **Acute toxicity**
LD₅₀ = 4060 mg/kg (skin-rat)
- **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.

12. Ecological Information:

12.1 N,N-Dimethylformamide(DMF)

- **Ecotoxicity**
Toxicity to fish: flow-through test LC₅₀ - Lepomis macrochirus (Bluegill sunfish) - 7.100 mg/L - 96 h(N,N-Dimethylformamide) (US-EPA)
Toxicity to daphnia and other aquatic invertebrates: static test EC₅₀ - Daphnia magna (Water flea) - 13.100 mg/L - 48 h(N,N-Dimethylformamide) (OECD Test Guideline 202)
Toxicity to algae: static test EC₅₀ - Desmodesmus subspicatus (green algae) - > 1.000 mg/L - 72 h(N,N-Dimethylformamide) (DIN 38412)
Toxicity to bacteria: static test EC₅₀ - Vibrio fischeri - 12.300 - 17.500 mg/L - 5min(N,N-Dimethylformamide) Remarks: (External MSDS)
- **Persistence and degradability**
Biodegradability: aerobic - Exposure time 21 d(N,N-Dimethylformamide) Result: 100 % - Readily biodegradable. (OECD Test Guideline 301E)
Biochemical Oxygen Demand (BOD): 900 mg/g(N,N-Dimethylformamide) Remarks: (Lit.)
Theoretical oxygen demand: 1.863 mg/g(N,N-Dimethylformamide) Remarks: (Lit.)
- **Bioaccumulative potential**
Bioaccumulation: Cyprinus carpio (Carp) - 56 d (N,N-Dimethylformamide)
Bioconcentration factor (BCF): 0,3 - 1,2 (OECD Test Guideline 305C)
Remarks: Does not significantly accumulate in organisms.
- **Mobility in soil:** No data available
- **Results of PBT and vPvB assessment:** No data available
- **Other adverse effects**
Stability in water: - ca.50d(N,N-Dimethylformamide)
Test substance: Water
Remarks: reaction with hydroxyl radicals(calculated)(Lit.)

12.2 Proclin 300, Sodium tetraphenylboron, Carbamide peroxide (CP)

- **Ecotoxicity:** No data available
- **Biodegradability:** No data available.
- **Bioaccumulative potential:** No data available.
- **Mobility in soil:** No data available.
- **Other adverse effects:** No data available

13. Disposal Considerations:

- **Disposal methods:** Dispose of waste in accordance to applicable national, regional, or local regulations. Burn in a chemical incinerator equipped with an afterburner and scrubber b 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 in the same manner as unused product.

14. Transportation Information:

- **RID/ADR: Non-Hazardous for Transport:** This substance is considered to be non-hazardous for transport.
- **IATA:** Non-Hazardous for Air Transport.
- **IMO:** Non-Hazardous for Sea Transport.

15. Regulations:

- This material safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008 and its amendments.

16. Other Information:

Further Information

This company shall not be held liable for any damage resulting from handling or from contact with the above product. This material must only be handled by suitably qualified experienced scientists in appropriately equipped and authorized facilities. The above information is believed to be correct but does not purport to be all inclusive and should be used as a guide only for experienced personnel. Always consult your safety advisor and follow appropriate local and national safety legislature. The absence of warning must not, under any circumstance, be taken to mean that no hazard exists.

End of safety data sheet