



SAFETY DATA SHEET

SECTION 1: Identification

Product identifier: N YIELD CX

Other means of identification: Not Applicable

SDS number - EA0007

Recommended use: Fertilizer Coating

Recommended restrictions: Use in accordance with supplier's recommendations.

Manufacturer/Importer/Supplier/Distributor information

Company name: INNOVAR AG

Address: 1201 6th Avenue West, Suite 302

Bradenton, Florida 34205 USA

Telephone: +1 866-412-1337 (8:00AM-5:00PM EST)

Emergency: Call CHEMTREC day or night

Within USA/Canada 1-800-424-9300

Outside USA/Canada +1 703-427-3887 (collect calls accepted)

SECTION 2: Hazard(s) identification

Classification of the substance or mixture

GHS-US Classification

Serious eye damage/eye irritation

Category 1

Reproductive toxicity

Category 2

Skin corrosion/irritation

Category 2

Label elements

Hazard symbol(s)



Signal word:

Danger

Hazard statement(s):

Causes serious eye damage. Suspected of damaging fertility or the unborn child. Causes skin irritation.

Precautionary statement(s)

Prevention:

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear eye and face protection, protective gloves, protective clothing.

Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Wash hands, forearms and face thoroughly after handling
Wear eye protection, face protection, skin protection, clothing protection
If on skin: wash with plenty of water

Response: If in eyes: Rinse with water for several minutes. Remove contact lenses, if present and continue rinsing. Immediately seek medical attention or advice.

Storage: Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with all applicable local/state/national/international laws and regulations.

Hazard(s) not otherwise Classified (HNOC) None Known

SECTION 3: Composition/information on ingredients

This product is a mixture:

Composition---Information On Ingredients

Chemical name	Common Name	CAS number	%
N-(n-butyl)-thiophosphoric triamide	NBPT	94317-64-3	15-55
Dimethyl sulfoxide	DMSO	67-68-5	20-40
Monopropylene glycol	Propylene glycol	57-55-6	5-49.5
Benzoic aldehyde	Benzaldehyde	100-52-7	1-5

Composition comments All concentrations are in percent by weight. Exact percentage values for components are proprietary in accordance with 29 CFR 1910.1200(i). Remaining components are proprietary, non-hazardous, and /or present at amounts below reportable limits.

SECTION 4: First-aid Measures

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth to mouth. If breathing is difficult, give oxygen. Call a physician.

Skin contact: Remove all contaminated clothing immediately. Wash immediately with soap and plenty of water. If irritation develops and persists, get medical attention. Launder contaminated clothing before reuse.

Eye contact: Wash immediately with large amounts of water for 15 minutes, lifting the upper and lower lids until no evidence of product remain. Get immediate medical attention.

Ingestion: Rinse mouth thoroughly. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical attention.

Most important symptoms/effects, acute and delayed: Risk of serious damage to eyes.

Indication of immediate medical attention and special treatment needed: Treat symptomatically.

SECTION 5: Fire-fighting measures

Suitable extinguishing media: Carbon Dioxide (CO₂), Dry chemical, Foam, Water Fog

Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread fire.

Specific hazards arising from the chemical: Vapors released in fire conditions may be toxic, irritating and corrosive.

Hazardous combustion products may include: Carbon oxides, nitrogen oxides, sulfur oxides and irritating vapors.

Special protective equipment and precautions for fire-fighters: Firefighters should be equipped with protective clothing and self-contained breathing apparatus to protect against potentially toxic and irritating vapors. In case of fire or explosion, keep unnecessary people away. Isolate hazard area and prevent any entry by non-emergency personnel. Stay upwind, out of low areas and ventilate closed spaces before entering.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: Wear appropriate personal protective equipment. (See Section 8)

Methods and materials for containment and cleaning up: Do not empty into drains or waters. Do not touch or walk through the spilled material; stop leak if you can do it without risk. Take up with sand or other non-combustible absorbent material or suitable vacuum and place in labeled sealable containers. Immediately consult your environmental supervisor.

Recommended Decontamination Facilities: Eye bath and water washing facilities.

SECTION 7: Handling and Storage

Precautions for safe handling: Keep away from sources of ignition. No smoking. Observe good industrial hygiene practices. Immediately remove all contaminated clothing. Avoid contact with eyes and skin. Inhalation of vapors and aerosols must be absolutely prevented. Employees should wash their hands and face before eating and drinking and shower thoroughly before leaving work. Keep away from food and drink stuffs.

Conditions for safe storage, including any incompatibles: Keep container tightly closed and in a well-ventilated place. Long term storage at temperatures above 100°F (36°C) and long term storage of opened containers, can adversely impact the efficacy of products containing N-(n-butyl)-thiophosphoric triamide. Store in accordance with all applicable local, state, national and international regulations.

SECTION 8: Exposure controls/personal protection

**Control Parameters
Occupational exposure limits**

US OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Substance	PEL-TWA (8 hour)	PEL-STEL (15 min)
N-(n-butyl)-thiophosphoric triamide (94317-64-3)	Not Established	Not Established
Dimethyl sulfoxide (67-68-5)	Not Established	Not Established
Propylene glycol (57-55-6)	Not Established	Not Established
Benzaldehyde (100-52-7)	Not Established	Not Established

ACGHI Threshold Limit Values

Substance	TLV-TWA (8 hour)	TLV-STEL (15 min)
N-(n-butyl)-thiophosphoric triamide (94317-64-3)	Not Established	Not Established
Dimethyl sulfoxide (67-68-5)	Not Established	Not Established
Propylene glycol (57-55-6)	Not Established	Not Established
Benzaldehyde (100-52-7)	Not Established	Not Established

Other Exposure Limits:

Dimethyl sulfoxide:
8-Hr (AIHA WEEL-TWA): 250 ppm

Propylene glycol:
8-Hr (AIHA WEEL-TWA): 10 mg/m³

Benzaldehyde:
8-Hr (AIHA WEEL-TWA): 2 ppm

(AIHA: American Industrial Hygiene Association,
WEEL: Workplace Environmental Exposure Levels,
TWA: Time-Weighted Average)

Appropriate engineering controls: Use local ventilation as recommended by onsite health and safety personnel to meet local needs.

Individual protection measures, such as personal protective equipment:

- Eye/face protection:** Protective eye-goggles with side-protection shield.
- Skin and Hand protection:** Long-sleeve shirts, pants, gloves (e.g. polyethylene/ethylene vinyl alcohol) and boots are recommended. Impervious suits are recommended when the potential for dermal contact is significant.
- Respiratory protection:** NIOSH-approved organic-vapor respirator, SCBA or SAR.
- Other:** Overalls, apron or other protective clothing.
- Thermal hazards:** Not available-

SECTION 9: Physical and chemical properties

Appearance:	
Physical state:	Liquid
Color:	Slightly hazy to clear golden yellow or blue
Odor:	Ammonia-like odor
Odor threshold:	Not Available
pH:	8-10 (10% in water @ 20°C)
Melting point/freezing point:	Not Available
Initial Boiling point/Boiling Range:	Not Available
Flash point:	94° C (201.2°F)- Closed Cup
Other information-Flammability	Does not support combustion at 103°C
Evaporation rate:	Not Available
Flammability (solid, gas):	Not Available
Upper/lower flammability or explosive limits	
Flammability limit – lower:	Not available
Flammability limit – upper:	Not Available
Explosive limit – lower:	Not available
Explosive limit – upper:	Not available
Vapor pressure:	Not available
Vapor density:	Not available
Relative density (Specific gravity):	1.11 - 1.13 @ 20°C (68°F)
Solubilities (water, other):	Partially soluble in water.
Partition coefficient (n-octanol/water):	Not Available
Auto-ignition temperature:	Not Available
Decomposition temperature:	No thermal decomposition is anticipated when stored and handled correctly.
Viscosity:	Not Available
Other information	
Bulk density:	Not Available
VOC (Weight %):	Not Available

SECTION 10: Stability and Reactivity

Reactivity:	This product is stable and non reactive under normal conditions of use, storage and transport.
Chemical stability:	This product is anticipated to be stable under normal use and storage conditions.
Possibility of hazardous reactions:	Not known to cause any hazardous reactions.
Conditions to avoid:	Heat, sparks, other sources of ignition and temperature extremes.
Incompatible materials:	Strong oxidizing and reducing agents. Acids.
Hazardous decomposition Products:	This product contains components which may decompose to release: methanethiol, formaldehyde, water, bis (methylthio) methane, dimethyl disulfide, dimethyl sulfone, dimethyl sulfide, sulfur dioxide, oxides of carbon, nitrogen, sulfur and other compounds.

SECTION 11: Toxicological information

Information on likely routes of exposure

Inhalation:	Yes. May cause irritation of the nose throat and respiratory tract.
Ingestion:	Yes. May cause irritation of the gastrointestinal tract.
Skin:	Yes, skin contact and absorption are possible.
Eye:	Yes. Risk of serious damage to eyes.

Symptoms related to the physical, chemical, and toxicological characteristics: May cause serious eye damage. May cause irritation to nose and throat if inhaled. Skin sensitization (an allergic reaction) may develop. Inhalation may lead to dizziness, nausea, unconsciousness and other narcotic effects.

Acute toxicity:

Components

N-(n-butyl)-thiophosphoric triamide (CAS 94317-64-3)

Oral LD50 (rat)	>2823 mg/kg
Dermal LD50 (rat)	>2000 mg/kg
NOAEL (rat)	445 mg/kg, 1 day

Skin corrosion/irritation	May cause irritation.
Serious eye damage	Category 1
Respiratory sensitization	Not classified
Skin sensitization	Not classified
Germ cell mutagenicity	Not classified
Carcinogenicity	Not classified
Reproductive toxicity	Category 2
Specific target organ toxicity, single exposure	Not classified
Specific target organ toxicity, repeated exposure	Not classified
Aspiration hazard	Not classified
Chronic effects	Prolonged exposure may cause chronic effects
Further information	Symptoms may be delayed

Dimethyl sulfoxide (CAS 67-68-5)

Oral LD50 (male rat)	14500 mg/kg
Skin LD50 (rabbit)	5000 mg/kg
Inhalation Gas LD50 (rat)	40250 ppm

Skin corrosion/irritation	Not classified
Serious eye damage	Not classified
Respiratory sensitization	Not classified
Skin sensitization	Not classified
Germ cell mutagenicity	Not classified
Carcinogenicity	Not classified
Reproductive toxicity	Not classified
Specific target organ toxicity, single exposure	Not classified
Specific target organ toxicity, repeated exposure	Not classified
Aspiration hazard	Not classified
Chronic effects	Not classified
Further information	Not applicable

Propylene glycol (CAS 57-55-6)	
Oral LD50 (rat)	22000 mg/kg
Skin LD50 (rabbit)	> 2000 mg/kg
LC50(inhl, rabbit, 2 hours)	> 317 mg/l
Skin corrosion/irritation	Not classified
Serious eye damage	Not classified
Respiratory sensitization	Not classified
Skin sensitization	Not classified
Germ cell mutagenicity	Not classified
Carcinogenicity	Not classified
Reproductive toxicity	Not classified
Specific target organ toxicity, single exposure	Not classified
Specific target organ toxicity, repeated exposure	Not classified
Aspiration hazard	Not classified
Chronic effects	Not classified
Further information	Not applicable
Benzaldehyde (CAS 100-52-7))	
Oral LD50 (rat/adult)	1430 mg/kg
Dermal LD50 (rabbit/adult)	>2000 mg/kg (based on benzoic acid)
Inhalation LC50 (rat/adult)	>1<5 mg/l (4 hours)
Skin corrosion/irritation	Not classified
Serious eye damage	Category 2A
Respiratory sensitization	Not classified
Skin sensitization	Not classified
Germ cell mutagenicity	Not classified
Carcinogenicity	Not classified
Reproductive toxicity	Not classified
Specific target organ toxicity, single exposure	Category 3-may cause respiratory irritation.
Specific target organ toxicity, repeated exposure	Not classified
Aspiration hazard	Not classified
Chronic effects	Not classified
Further information	Not applicable

SECTION 12: Ecological information

Ecotoxicity

Product data on mixture: Not available

Ingredient Information:

N-(n-butyl)-thiophosphoric triamide
LC50, Bluegill (*Lepomis macrochirus*) 1140 mg/l
EC50, 48h, water flea (*Daphnia magna*) 290 mg/l
Algae (*Selenastrum capricornutum*) EC50 280 mg/l

Dimethyl sulfoxide
LC50, rainbow trout, 96-hour 35000 mg/l
EC50, water flea (*Daphnia pulex*) 27500 mg/l
EC50, algae (*Lepomis macrochirus*) 96-hour >400000 mg/l

Propylene glycol
Fish - Low toxicity: LC/EC/IC50 > 100 mg/l
Aquatic crustacean Low toxicity: LC/EC/IC50 > 100 mg/l
Algae/aquatic plants Low toxicity: LC/EC/IC50 > 100 mg/l

Benzaldehyde
LC50, fish 96-hour 1.07 mg/l
Algae 96 hour EC50 23.1 mg/l
Invertebrates 48 hour EC50 16.2 mg/l

Persistence and degradability	Product Data Not Available
Bioaccumulative potential	Product Data Not Available
Mobility in soil	Product Data Not Available
Mobility in general	Product Data Not Available
Other adverse effects	Product Data Not Available

SECTION 13: Disposal considerations

Disposal instructions: Do not allow this material to drain into sewers or water supplies. Dispose of in accordance with all applicable regulations. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal. Since emptied containers may retain product residue, follow label warnings even after container is empty.

SECTION 14: Transport Information

LAND TRANSPORT (US-DOT): Not regulated for transport of dangerous goods.
SEA TRANSPORT (IMDG): Not regulated for transport of dangerous goods.
IATA: Not regulated for transport of dangerous goods.
TDG: Not regulated as a dangerous goods.

SECTION 15: Regulatory Information

US Regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200

N-(n-butyl)-thiophosphoric triamide (NBPT) is subject to a Significant New Use Rule (SNUR) as specified in 40 CFR 721.6090.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpart D)

N-(n-butyl)-thiophosphoric triamide (NBPT) CAS 94317-64-3 1.0% One-Time Export Notification only.

CERCLA Hazardous Substance List (40 CFR 302.4) Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1050) Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard	-Yes
	Delayed Hazard	-Yes
	Fire Hazard	-No
	Pressure Hazard	-No
	Reactivity Hazard	-No

SARA 302 Extremely Hazardous Substance: -No

SARA 311/312 Hazardous Chemical: -Yes

SARA 313 (TRI reporting): -No

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List: Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130): Not regulated.

Safe Drinking Water Act: Not regulated

US State Regulations.

California Proposition 65-This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

New Jersey Right To Know Components: Dimethyl sulfoxide CAS 67-68-5
Propylene glycol CAS 57-55-6

Pennsylvania Right To Know Components: Propylene glycol CAS 57-55-6

Canada Regulations

Controlled Drugs and Substances Act	Not Regulated
Export Control List (CEPA 1999, Schedule 3)	Not Listed
Precursor Control Regulations	Not Regulated

INVENTORIES

Canada	Domestic Substances List (DSL)	All components on inventory.
US	Toxic Substances Control Act (TSCA) Inventory	All components on inventory.

SECTION 16: Other Information

Revision Date: 7-17-2018

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