NUFARM AGRICULTURE INC.

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

SUPPLIED BY:
Nufarm Agriculture Inc.
5507 1st Street, SE
Calgary, AB. T2H 1H9

Phone Number: (403)-253-8471
Fax Number: (403)-253-8478

MANUFACTURED BY:
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PRODUCT:	**SIGNAL ADJUVANT**
PCP NUMBER:	29173
DATE PREPARED:	March 24, 2009
PREPARER:	Brent R. McLennan
CHEMICAL FAMILY/USE:	Petroleum Solvent Blend / Adjuvant
FORMULA:	NA
CHEMICAL SYNONYMS:	None

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

Ingredients	Wt. %	CAS NO.
Petroleum Solvent Blend	83	64742-65-0 and 64742-94-5
Surfactant Blend	17	NA

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: May cause irritation to the eyes. Slightly to non-toxic orally, dermally, and by inhalation.

EFFECTS OF ACUTE EXPOSURE:
INGESTION: Ingestion of large doses may cause diarrhoea. The petroleum solvent in this product can cause a chemical pneumonitis if aspirated. Small amounts of liquid aspirated into the respiratory system during ingestion or from vomiting may cause mild to severe pulmonary injury which may result in laboured breathing, coma and death.
SKIN CONTACT: Prolonged or repeated skin contact may cause irritation and possibly a rash (dermatitis).
INHALATION: High vapour concentrations (>1000 ppm) can be irritating to the eyes and the respiratory tract, and cause headaches,

dizziness, drowsiness, unconsciousness, and other central nervous system effects, including death.
EYE CONTACT: Contact with eyes may cause irritation.
MEDICAL CONDITIONS AGGRAVATED: Pre-existing eye, skin and respiratory disorders may be aggravated by exposure to this product. Individuals with chronic respiratory disorders or pre-existing dermatitis should use extra care in handling this product.
SUBCHRONIC (TARGET ORGAN) EFFECTS:

Petroleum Solvent	Respiratory tract, skin and eye irritation. Central nervous system effects.
Surfactant Blend:	Respiratory tract, skin and eye irritant; Central nervous system depression and liver injury.

CHRONIC EFFECTS/CARCINOGENICITY: Not Established. No information is available and no adverse carcinogenic effects are anticipated.
REPRODUCTIVE TOXICITY: No information is available and no adverse reproductive effects are anticipated.
DEVELOPMENTAL TOXICITY: No information is available and no adverse teratogenic effects are anticipated.
GENOTOXICTY: No information is available and no adverse mutagenic effects are anticipated.
PRINCIPLE ROUTES OF EXPOSURE: Skin, eyes, mouth, lungs.
TOXICOLOGICALLY SYNERGISTIC MATERIALS: None known.
OTHER: See Section 11.

4. FIRST AID MEASURES

IF POISONING IS SUSPECTED, immediately contact the poison information centre, doctor or nearest hospital. Have the product container, label or Material Safety Data Sheet with you when calling a poison control center or doctor, or going for treatment. Tell the person contacted the complete product name, and the type and amount of exposure. Describe any symptoms and follow the advice given. Call the Nufarm 24 Hour Emergency Response Number (1-800-424-9300) or Prosar (1-877-325-1840) for further information.
INGESTION: Take patient to nearest hospital or contact poison control centre. Take container, label booklet or product name and Pest Control Product Registration Number with you when seeking medical attention.
DO NOT INDUCE VOMITING. If victim is fully conscious, immediately give a large quantity of water to drink. Never give anything by mouth to an unconscious person. Vomiting should only be induced under the direction of a physician or a poison control center. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in of vomitus, rinse mouth and administer water.
SKIN: Immediately remove contaminated clothing and wash skin, hair and fingernails thoroughly with soap and water. Flush skin with running water for a minimum of 20 minutes. Obtain medical attention if irritation occurs.
INHALATION: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is laboured, give oxygen. Obtain immediate medical attention.
EYES: Flush eyes with clean water, holding eyelids apart for a minimum of 20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice. Obtain medical attention immediately if irritation persists.

NOTE TO PHYSICIAN:
There is no specific antidote if this product is ingested.
Induction of emesis is not recommended due to the large amount of petroleum solvent in this product, which could cause chemical pneumonitis if aspirated. If ingested, lavage stomach, taking care to avoid aspiration of stomach contents into the lungs. Check for possible mucosal damage before beginning gastric lavage.
If inhaled, observe for delayed onset of pulmonary edema.
Treat central nervous system effects symptomatically.

5. FIRE FIGHTING MEASURES

FLASH POINT AND METHOD: .....192ºC (PM CC)
CONDITIONS OF FLAMMABILITY: .....N/E
FLAMMABLE LIMITS IN AIR - Upper (%):.....N/E
FLAMMABLE LIMITS IN AIR - Lower (%):.....N/E
AUTOIGNITION TEMPERATURE: .....N/E
SENSITIVITY TO MECHANICAL IMPACT (Y/N):.....No
SENSITIVITY TO STATIC DISCHARGE: .....No
EXTINGUISHING MEDIA: Use foam, carbon dioxide, dry powder, halon extinguishant or water fog or mist, (avoid use of water jet). Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. Contain run-off water with, for example, temporary earth barriers.
SPECIAL FIREFIGHTING PROCEDURES: Firefighters should wear self-contained breathing apparatus and full protective clothing when fighting chemical fires. Minimize and contain water runoff.
Hazardous combustion products: Carbon monoxide, carbon dioxide and dense smoke.
Unusual Fire, Explosion and Reactivity Hazards: Combustible liquid. Can release vapours that form explosive mixtures at temperatures at or above the flash point. If heated above flash point, heavy vapours can flow along surfaces to distant ignition sources and flash back. During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.
Conditions under which flammability could occur: This product contains aromatic hydrocarbon. Temperatures above the flash point. Keep fire exposed containers cool by spraying with water.

6. ACCIDENTAL RELEASE MEASURES

ACTION TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Use safety equipment and procedures appropriate to the size of the spill. Keep unnecessary people away. Avoid runoff to natural waters and sewers. Surround and absorb spills with inert material such as perlite, sawdust, clay granules, vermiculite, sand or dirt. Contain all affected material in a closed, labeled container for proper disposal. Isolate from other waste materials. Clean contaminated area such as hard surfaces with detergent and water, collecting cleaning solution for proper disposal. Large spills to soil or similar surfaces may necessitate removal of top soil.

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: KEEP OUT OF REACH OF CHILDREN and animals. Keep away from food and feed products. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. After work, rinse gloves and remove protective equipment. Wash hands thoroughly with soap and water after handling, and before eating, tobacco use, drinking, or using the toilet. Wash contaminated clothing before re-use and separate from household laundry. Keep containers closed when not in use. Keep product, wash or rinse water, and contaminated materials out of water, away from crops, and away from access by people, animals and birds.

Appropriate storage practices/requirements: Store in original container only in a well-ventilated, cool, dry secure area. Protect from heat, sparks and flame. Do not expose sealed containers to temperatures above 40°C. Keep separate from other products to prevent cross contamination. Rotate stock. Clean up spilled material immediately.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE LIMITS:

Ingredients	TWA	ACGIH TLV	STEL	Units
Petroleum Solvent Blend	100 ppm*	N/E	N/E	ppm
Surfactant Blend	N/E	N/E	N/E	-

* Recommended by manufacturer

ENGINEERING CONTROLS: Ensure work areas have ventilation, containment, and procedures sufficient to maintain airborne levels below the TLV. Warehouses, production area, parking lots and waste holding facilities must have adequate containment to prevent environmental contamination. Provide separate shower and eating facilities.

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

GENERAL: Avoid breathing vapours or aerosols. Avoid contact with eye, skin and clothing. Wash thoroughly after handling and before eating, drinking, or using tobacco.
RESPIRATORY PROTECTION EQUIPMENT: A respirator is not normally required when handling this substance. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below exposure limits. A NIOSH-certified combination air-purifying respirator with an N,P or R 95 or HE class filter and an organic vapor cartridge may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a pressure demand atmosphere-supplying respirator if there is any potential for uncontrolled release, exposure levels are not known, or under any other circumstances where air-purifying respirators may not provide adequate protection.
PROTECTIVE GLOVES: Wear chemical-resistant (such as nitrile or butyl) gloves.
EYE AND FACE PROTECTION: Where eye contact is likely, use chemical splash goggles. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. For overhead exposure, wear chemical-resistant headgear.
OTHER PROTECTIVE EQUIPMENT: Where contact is likely, wear coveralls, socks and chemical-resistant footwear.
VENTILATION: Use only in well ventilated area.

9. PHYSICAL AND CHEMICAL PROPERTIES

NOTE: Physical data are typical values, but may vary from sample to sample. A typical value should not be construed as a guaranteed analysis or as a specification.

BOILING POINT:.....NA
VAPOR PRESSURE:.....NA
VAPOR DENSITY (air = 1): .....NA
FREEZING POINT:.....-40 ^{o}C
MELTING POINT: .....NAp
PHYSICAL STATE: .....Liquid
ODOUR:.....Mild aromatic
COLOUR: .....Light amber
ODOR THRESHOLD (ppm): .....N/E
EVAPORATION RATE (butyl acetate = 1): .....NA
SPECIFIC GRAVITY (water = 1) OR DENSITY: .....Approx. 0.93 @ 20°C
pH:.....8.2 (4% emulsion in water)

SOLUBILITY IN WATER (20°C):.....NA
COEFFICIENT OF WATER/OIL DISTRIBUTION:.....NA
VISCOSITY (20°C):.....12 cps

10. STABILITY AND REACTIVITY

STABILITY: Stable under normal use and storage conditions.
HAZARDOUS POLYMERIZATION: Will not occur.
HAZARDOUS THERMAL DECOMPOSITION/COMBUSTION PRODUCTS: Carbon dioxide, carbon monoxide, nitrogen oxides, ammonia, sulphur oxides.
INCOMPATIBILITY (MATERIALS TO AVOID): Strong oxidizer agents.
CONDITIONS TO AVOID: Ignition sources, Temperatures below -17 °C or above 50 °C.

11. TOXICOLOGICAL INFORMATION

ACUTE ORAL LD_{50} (mg/kg): .....> 10,000 mg/kg body weight (Rat)
ACUTE DERMAL LD_{50} (mg/kg):.....> 2,000 mg/kg body weight (Rat)
ACUTE INHALATION LC_{50} (mg/l):.....NA
OTHER: This material may irritate human eyes following contact. Frequent or prolonged contact with human skin may irritate the skin and cause a skin rash (dermatitis). Skin contact may aggravate an existing dermatitis condition. This product is not expected to cause sensitization.

Toxicity of Other Components

The acute toxicity test results reported above for the finished product take into account any acute hazards related to the "other components" in the formulation.

12. ECOLOGICAL INFORMATION

Summary of Effects	Not Available
Eco-Acute Toxicity	Not Available
Eco-Chronic Toxicity	Not Available
Environmental Fate	Not Available

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Disposal should be made in accordance with federal, provincial and local regulations. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean up of spills.

Do not reuse container for any purpose. If applicable, return container in accordance with return program. If a recyclable container, dispose of at a container collection site. Contact local distributor, dealer or municipality for the location of the nearest collection site. Before taking the container to the collection site, triple or pressure rinse the empty container adding rinsings to spray tank, and make container unsuitable for further use. If there is no container collection site in your area, dispose of the container in accordance with provincial requirements.

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14. TRANSPORT INFORMATION

CANADIAN TDG DESCRIPTION (Road & Rail): Not Regulated. Contact manufacturer for updates to transport information.

15. REGULATORY INFORMATION

WHMIS HAZARD CLASS: Exempt
WHMIS TRADE SECRET: Exempt. (This product is regulated under the Pest Control Products Act - WHMIS exempt.)

16. OTHER INFORMATION

EMERGENCY TELEPHONE NUMBERS:
For spills or transportation accidents, Chemtrex, 1-800-424-9300.
For health or environmental emergencies, Prosar, 1-877-325-1840.
For product and use information, Nufarm Agriculture Inc., 1-800-868-5444.

REVISIONS:
The following has been revised since the last issue of this MSDS: New

ADDITIONAL INFORMATION:
Abbreviations used throughout the MSDS are:
NA = Not available
NAp = Not applicable
N/E = None Established.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

Company and public references utilized in preparation of the MSDS.

END OF MSDS