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**In Case of Emergency, Call
1-800-327-8633 (FAST MED)**

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MSDS prepared by:

Department of Regulatory & Biology Development
Syngenta Crop Protection Canada, Inc.

For further information contact:
1-87-SYNGENTA (1-877-964-3682)

SECTION – 1: PRODUCT IDENTIFICATION

Product Identifier: AGRAL[®] 90 Non Ionic Wetting and Spreading Agent
Registration Number: 11809 (Pest Control Products Act)
Chemical Classes: A non-ionic wetting and spreading agent.

Formulation No.: A12712A

Active Ingredient(%): Nonylphenoxy polyethoxy ethanol (92 %)

CAS No.: 68412-54-4

Chemical Name: Nonylphenoxy polyethoxy ethanol.

Product Use: A non-ionic wetting and spreading agent for use with Activol[®], Ambush[®] 500EC, Cymbush[®] 250EC, Gramoxone[®], Reglone[®], Touchdown[®] 480, Touchdown iQ, Reflex[®] and other control products as labelled. For further details please refer to product label.

SECTION – 2 : COMPOSITION/INFORMATION ON INGREDIENTS

Material	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen	WHMIS†
Nonylphenoxy polyethoxy ethanol (CAS# 68412-54-4) (92 %)	Not Established	Not Established	Not Established	No	Yes
Isobutanol (CAS # 78-83-1) (≤ 9 %)	300 mg/m ³ TWA	152 mg/m ³ TWA	225 mg/m ³ STEL	No	Yes

† Material listed in Ingredient Disclosure List under Hazardous Products Act.
Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

SECTION – 3: HAZARDS IDENTIFICATION

Symptoms of Acute Exposure

Causes eye and skin irritation. May irritate respiratory tract. Swallowing may cause nausea and vomiting.

Hazardous Decomposition Products

Can decompose at high temperatures forming toxic gases including oxides of carbon.

Physical Properties

Appearance: Clear liquid.
Odour: Sweet.

Unusual Fire, Explosion and Reactivity Hazards

Flammable liquid. During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

Potential Health Effects

Relevant routes of exposure: Skin, eyes, mouth, lungs.

Adverse health effects from exposure to product or ingredients of product:

Prolonged exposure may cause dermatitis.

SECTION – 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 Syngenta, 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 Syngenta Emergency Line [**1-800-327-8633 (1-800-FASTMED)**], for further information.

EYE CONTACT: Immediately flush eyes with clean water, holding eyelids apart for a minimum of 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Syngenta, a poison control center or doctor for treatment advice. Obtain medical attention immediately if irritation persists.

SKIN CONTACT: 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: Move victim to fresh air. If not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call Syngenta, a poison control centre or doctor for treatment advice.

INGESTION: If swallowed, immediately contact Syngenta, a poison control centre, doctor or nearest hospital for treatment advice. Provided the patient is conscious, wash out mouth with water. Do not give anything by mouth to an unconscious person. Do not induce vomiting unless directed by a physician or a poison control center. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in of vomitus

NOTES TO PHYSICIAN:

There is no specific antidote if this product is ingested. Treat symptomatically.

MEDICAL CONDITIONS KNOWN TO BE AGGRAVATED:

Repeated and/or prolonged contact may cause dermatitis. Irritant (eye, inhalation, ingestion).

SECTION – 5: FIRE FIGHTING MEASURES

Flash point and method: 47 °C .

Upper and lower flammable (explosive) limits in air: LEL = 1.8; UEL = 10.6.

Auto-ignition temperature: Not Available.

Flammability: Flammable.

Hazardous combustion products: During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion including oxides of carbon.

Conditions under which flammability could occur: Keep fire exposed containers cool by spraying with water.

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.

Sensitivity to explosion by mechanical impact: None known.

Sensitivity to explosion by static discharge: None known.

SECTION – 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Make sure all personnel involved in the spill cleanup follow good industrial hygiene practices. A small spill can be handled routinely. Use adequate ventilation and wear equipment and clothing as described in Section 8 and/or the product label.

Procedures for dealing with release or spill: Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Sections 7 and 8. Pump or scoop large amounts of liquid into a disposable container. Absorb remaining liquid or smaller spills with clay, sand or vermiculite. Scoop or sweep up material and place into a disposal container. Wash area with detergent and water. Pick up wash liquid with additional absorbent and place into compatible disposal container. On soils, small amounts will naturally decompose. For large amounts, skim off the upper contaminated layer and collect for disposal. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposal. Spillages or uncontrolled discharges into watercourses must be reported to the appropriate regulatory authority.

SECTION – 7: HANDLING AND STORAGE

Handling practices: KEEP OUT OF REACH OF CHILDREN. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Avoid breathing vapours or spray mist. Wear full protective clothing and equipment (see Section 8). After work, rinse gloves and remove protective equipment, and wash hands thoroughly with soap and water after handling, and before eating, tobacco use, drinking, applying cosmetics or using the toilet. Wash contaminated clothing before re-use and separate from household laundry. Keep containers closed when not in use. Protect product, wash or rinse water, and contaminated materials from uncontrolled release into the environment, or from access by animals, birds or unauthorized people.

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 containers to temperatures above 30 °C. Keep separate from other products to prevent cross contamination. Rotate stock. Clean up spilled material immediately.

National Fire Code classification: Class II liquid.

SECTION – 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Applicable control measures, including engineering controls: This product is intended for use outdoors where engineering controls are not necessary. If necessary, 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 OF THIS PRODUCT.

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

Personal protective equipment for each exposure route:

General: Avoid breathing dust, vapours or aerosols. Avoid contact with eye, skin and clothing. Wash thoroughly after handling and before eating, drinking, applying cosmetics or handling tobacco.

INGESTION: Do not eat, drink, handle tobacco, or apply cosmetics in areas where there is a potential for exposure to this material. Always wash thoroughly after handling.

EYES: 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.

SKIN: Where contact is likely, wear chemical-resistant gloves (such as nitrile or butyl), coveralls, socks and chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear.

INHALATION: 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, R or HE class filter and an organic vapour cartridge may be used under certain circumstances where airborne concentrations are expected to exceed exposure limits (e.g. emergency spills).

SECTION – 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear liquid.

Formulation Type: Solution Concentrate.

Odour: Sweet.

pH: 6.5 – 7.5 (3% aqueous solution).

Vapour pressure and reference temperature: 10 mmHg @ 20 °C.

Vapour density: 2.55.

Boiling point: 108 °C

Melting point: Not available.

Freezing point: - 7 °C.

Specific gravity or density: 1.03 g/cm³ @ 20 °C.

Evaporation Rate: Not available.

Water/oil partition coefficient: Not available.

Odour threshold: Not available.

Viscosity: Not available.

Solubility in Water: Not available.

SECTION – 10: STABILITY AND REACTIVITY

Chemical stability: Stable under normal use and storage conditions.

Conditions to avoid: Keep away from heat, sparks or open flames. Keep away from sources of ignition.

Incompatibility with other materials: Strong oxidizing materials, such as hydrogen peroxide, bromine, chromic acid, strong bases, strong acids. Can be made to burn under fire conditions.

Hazardous decomposition products: Carbon dioxide, carbon monoxide and, possibly, irritating gases.

Hazardous polymerization: Will not occur.

SECTION – 11: TOXICOLOGICAL INFORMATION

Acute toxicity/Irritation Studies (Finished Product):

Ingestion:	<u>Low Acute Toxicity</u> Oral (LD50 Rat):	2,460 mg/kg body weight
Dermal:	<u>Low Acute Toxicity</u> Dermal (LD50 Rabbit):	4,240 mg/kg body weight
Inhalation:	<u>Low Acute Toxicity</u> Inhalation (LC50 Rat):	8,000 ppm air - 4 hours
Eye Contact:	<u>Moderately Irritating (Rabbit)</u>	
Skin Contact:	<u>Irritating (Rabbit)</u>	
Skin Sensitization:	<u>Not a Sensitizer (Guinea Pig)</u>	

Reproductive/Developmental Effects

Not Available

Chronic/Subchronic Toxicity Studies

Not Available

Carcinogenicity

Not Available

Other Toxicity Information:

ISOBUTANOL SOLUTION - Ingestion of or exposure to large amounts may cause central nervous system (CNS) depression. Product may be irritating to the nose, throat and respiratory tract.. Repeated and/or prolonged contact with skin may cause dermatitis. This product causes eye and skin irritation, redness and pain.

Toxicity of Other Components

The acute toxicity test results reported in Section 11, above, for the finished product take into account any acute hazards related to the “other components” in the formulation.

Other materials that show synergistic toxic effects together with the product: None known.

Target Organs

Not Available.

SECTION – 12: ECOLOGICAL INFORMATION

Summary of Effects

AGRAL is an adjuvant used as a registered tank-mix partner for select herbicide products. As a petroleum-based product, this adjuvant has the potential to be toxic to aquatic biota. Do not apply this product directly to freshwater habitats, estuaries, or marine habitats. Do not contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.

Environmental Fate

Although AGRAL 90 is not directly applied to surface waters, it may reach the aquatic environment via off-target spray drift or overland run-off during heavy rainfall events. In addition, AGRAL 90 has limited potential for leaching to groundwater. However, degradation in soil and the aquatic environment is expected to occur fairly rapidly via microbial biotransformation and hydrolysis.

SECTION – 13: DISPOSAL CONSIDERATIONS

Waste disposal information: Do not reuse empty containers unless they are specifically designed to be re-filled. Empty container retains product residue. Dispose of empty containers in accordance with local regulations. Consult provincial environment ministry for advice on waste disposal. Industrial/commercial waste may be handled at licensed facilities only. Waste shipments must be securely packaged and properly labelled. Only licensed carriers may be used, and proper documents must accompany the shipment.

SECTION – 14 : TRANSPORT INFORMATION

Shipping information such as shipping classification:

TRANSPORTATION OF DANGEROUS GOODS CLASSIFICATION - ROAD/RAIL.
Not Regulated.

SECTION – 15: REGULATORY INFORMATION

WHMIS classification for product: Exempt

This MSDS has been prepared in accordance with WHMIS requirements, but the data are presented under 16 headings.

Pest Control Products (PCP) Act Registration No.: 11809

SECTION – 16: OTHER INFORMATION

The information contained herein is offered only as a guide to the handling of this specific material and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all-inclusive and the manner and conditions of use and handling may involve other and additional considerations. No warranty of any kind is given or implied and Syngenta will not be liable for any damages, losses, injuries or consequential damages which may result from the use of or

reliance on any information contained herein. This Material Safety Data Sheet is valid for three years. This product is under the jurisdiction of the Pest Control Products Act and is exempt from the requirements for a WHMIS compliant MSDS. Hazardous properties of all ingredients have been considered in the preparation of this MSDS. Read the entire MSDS for the complete hazard evaluation of this product.

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