



### Section 1: Identification

<b>1.1 Product identifier</b>	Optimum® Leptra®
<b>1.2 Relevant identified uses of the substance or mixture and uses advised against</b>	
<i>Recommended use</i>	N/AP
<i>Restrictions on use</i>	N/AP
<b>1.3 Details of the supplier of the safety data sheet</b>	Pioneer Hi-Bred International, Inc. 7250 NW 62 <sup>nd</sup> Avenue Johnston, IA 50131
<b>1.4 Emergency telephone number</b>	1-800-342-7123

### Section 2: Hazard(s) Identification

<b>2.1 Classification of the substance or mixture</b>	Not applicable
<b>2.2 Label Elements</b>	
<i>Pictogram</i>	Not applicable
<i>Signal word</i>	Not applicable
<i>Hazard statement(s)</i>	This product is a non-hazardous material.
<i>Precautionary statement(s)</i>	No special precautions.
<b>2.3 Other hazards</b>	N/AP

### Section 3: Composition/Information on Ingredients

<b>3.1 Substances</b>	<i>Bacillus thuringiensis</i> Cry1F, Cry1Ab and Vip3Aa20 Corn Seed
<b>3.2 Mixtures</b>	
<i>Ingredient #1:</i>	
<i>Chemical name</i>	N/AP
<i>Common name and synonyms</i>	<i>Bacillus thuringiensis</i> Cry1F protein and the genetic material (plasmid insert PHI8999A) necessary for its production in corn DAS-ØØ15Ø7-1
<i>CAS number (and other unique identifiers)</i>	6481
<i>Impurities and stabilizing additives</i>	N/AP
<i>Concentration</i>	N/AP
<i>Ingredient #2:</i>	
<i>Chemical name</i>	N/AP
<i>Common name and synonyms</i>	<i>Bacillus thuringiensis</i> Cry1Ab protein and the genetic material (vector PV-ZMBK07) necessary for its production in corn event MON-ØØ81Ø-6
<i>CAS number (and other unique identifiers)</i>	6526
<i>Impurities and stabilizing additives</i>	N/AP
<i>Concentration</i>	N/AP

<i>Ingredient #3:</i>	<i>Chemical name</i>	N/AP
	<i>Common name and synonyms</i>	<i>Bacillus thuringiensis Vip3Aa20 protein and the genetic material (via elements of ppNOV1300) necessary for its production in corn event SYN-IR162-4</i>
	<i>CAS number (and other unique identifiers)</i>	6599
	<i>Impurities and stabilizing additives</i>	N/AP
	<i>Concentration</i>	N/AP

### Section 4: First Aid Measures

<b>4.1 Description of first aid measures</b>	No need for first aid is anticipated
<b>4.2 Most important symptoms and effects, both acute and delayed</b>	N/AP
<b>4.3 Indication of any immediate medical attention and special treatment needed</b>	N/AP

### Section 5: Firefighting Measures

<b>5.1 Extinguishing media</b>	Use extinguishing media appropriate for surrounding fire.
<b>5.2 Special hazards arising from the substance or mixture</b>	None
<b>5.3 Advice for firefighters</b>	None

### Section 6: Accidental Release Measures

<b>6.1 Personal precautions, protective equipment and emergency procedures</b>	None required.
<b>6.2 Environmental precautions</b>	None required.
<b>6.3 Methods and material for containment and cleaning up</b>	Non-hazardous material. If material is spilled, sweep up and dispose in accordance with all applicable federal, state and local environmental regulations.
<b>6.4 Reference to other sections</b>	N/AP

### Section 7: Handling and Storage

<b>7.1 Precautions for safe handling</b>	Keep in original packaging, tightly closed in a safe place. Retain original product labeling.
<b>7.2 Conditions for safe storage, including any incompatibilities</b>	Store with low humidity at or below 50% and 50 degrees F to maintain seed viability for 4-6 years. Combustible material; keep away from heat and flames.
<b>7.3 Specific end use(s)</b>	Use in accordance with product labeling.

## Section 8: Exposure Controls/Personal Protection

<b>8.1 Control parameters</b>	<i>OSHA PELs</i> <i>ACGIH TLVs</i>	N/AP N/AP
<b>8.2 Exposure controls</b>	<i>Engineering controls</i> <i>PPE</i>	N/AP None required.

## Section 9: Physical and Chemical Properties

<b>9.1 Information on basic physical and chemical properties</b>	<i>Appearance</i> <i>Upper/lower flammability or explosive limits</i> <i>Odor</i> <i>Vapor pressure</i> <i>Odor threshold</i> <i>Vapor density</i> <i>pH</i> <i>Relative density</i> <i>Specific gravity</i> <i>Melting point/freezing point</i> <i>Solubility(ies)</i> <i>Initial boiling point and boiling range</i> <i>Flash point</i> <i>Evaporation rate</i> <i>Flammability (solid, gas)</i> <i>Partition coefficient: n-octanol/water</i> <i>Auto-ignition temperature</i> <i>Decomposition temperature</i> <i>Viscosity</i> <i>Explosive properties</i> <i>Oxidizing properties</i>	Corn seed N/AP No obvious odor. N/AP N/AP N/AP N/AP N/AP ~1.26 N/AP N/AP N/AP N/AP N/AP N/AP N/AP N/AP N/AP N/AP N/AP N/AP N/AP
<b>9.2 Other information</b>		N/AP

## Section 10: Stability and Reactivity

<b>10.1 Reactivity</b>	Material is non-reactive.
<b>10.2 Chemical stability</b>	N/AP
<b>10.3 Possibility of hazardous reactions</b>	N/AP
<b>10.4 Conditions to avoid</b>	N/AP
<b>10.5 Incompatible materials</b>	N/AP
<b>10.6 Hazardous decomposition products</b>	None known.

## Section 11: Toxicological Information

11.1 Information on toxicological effects	None observed.
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## Section 12: Ecological Information

12.1 Toxicity	<b>Cry1F:</b> Ingestion LD50 (Mouse) >5050 mg/kg <b>Cry1Ab:</b> Ingestion LD50 (Mouse) >4000 mg/kg <b>Vip3Aa20:</b> Ingestion LD50 (Mouse) >3675 mg/kg Acute toxicity data generated on comparable <i>Bacillus thuringiensis</i> microbial toxins have produced results that demonstrate no toxicity to non-target insects, fish, and avian species.
12.2 Persistence and degradability	N/AP
12.3 Bioaccumulative potential	N/AP
12.4 Mobility in soil	N/AP
12.5 Results of PBT and vPvB assessment	N/AP
12.6 Other adverse effects	N/AP

## Section 13: Disposal Considerations

13.1 Waste treatment methods	Dispose of material within all applicable federal, state, and local environmental regulations.
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## Section 14: Transport Information

14.1 UN number	N/AP
14.2 UN proper shipping name	N/AP
14.3 Transport hazard class(es)	N/AP
14.4 Packing group	N/AP
14.5 Environmental hazards	N/AP
14.6 Special precautions for user	N/AP
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	N/AP

## Section 15: Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture	EPA Registration Number: 29964-19
15.2 Chemical safety assessment	Cry1F, Cry1Ab and Vip3Aa20 proteins have been granted exemption from the requirement of a tolerance by EPA: 40 CFR Sect 174.504, 174.511 and 174.501 respectively.

## Section 16: Other Information

N/AP