



# SAFETY DATA SHEET

## PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: LIBERATE  
 ACTIVE: **CYANAMIDE 520g/L**  
 REGISTRATION HOLDER: HARVEST CROP SOLUTIONS (PTY) LTD.  
 DISTRIBUTOR: HARVEST CHEMICALS (PTY) LTD.  
 ADDRESS: 25 DAN PIENAAR ROAD  
 KLOOF, KWAZULU-NATAL  
 3610  
 REPUBLIC OF SOUTH AFRICA  
 CONTACT NUMBER: +27 (0) 31 764 6315  
 EMERGENCY NUMBER: +27 (0) 82 442 1134

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### 1. CHEMICAL PRODUCT

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Common Name: Cyanamide 520g/L SL  
 Molecular Formula: CH<sub>2</sub>N<sub>2</sub>  
 Molecular weight: 42.04  
 Structural formula: H<sub>2</sub>NC=N  
 Appearance: Yellowish transparent liquid

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### 2. COMPOSITION/INFORMATION ON INGREDIENTS

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Composition	CAS No.	Content
Cyanamide	420-04-02	520g/L min
Other formulation ingredients		Up to 1L

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### 3. HAZARDS IDENTIFICATION

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Potential Acute Health Effects:

Hazardous in case of skin contact (irritant, sensitizer, permeator), of eye contact (irritant), of ingestion, of inhalation. Severe over-exposure can result in death.

Potential Chronic Health Effects:

CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS:  
 Not available: DEELOPMENTAL TOXICITY: Not available. The substance may be toxic to the nervous

system, skin. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

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#### 4. FIRST AID MEASURES

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**Eye Contact:** Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

**Skin Contact:** In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

**Serious Skin Contact:** Wash with a disinfectant soap and cover the contaminated skin with anti-bacterial cream. Seek immediate medical attention.

**Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Serious inhalation:** Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

**Ingestion:** If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything mouth to mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Serious Ingestion: Not available.

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#### 5. FIRE FIGHTING MEASURES

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Flammability of the Product: May be combustible at high temperature. Auto-Ignition Temperature: Not available.

Flash points: CLOSED CUP: 141 °C (285.8°F). (Setaflash)

Flammable Limits: Not available

Products of Combustion: These products are carbon oxides (CO<sub>2</sub> CO<sub>2</sub>), nitrogen oxides (NO<sub>2</sub> NO<sub>2</sub>)-

Fire Hazards in Presence of Various Substances: Slightly inflammable to flammable in presence of open flames and sparks, of heat.

Explosion Hazards in Presence of Various Substances:

Risks of explosion of the product in presence of mechanical impact. Not available.

Risk of explosion of the product in presence of static discharge. Not available.

Fire Fighting Media and Instructions:

SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards: When heated to decomposition it emits toxic fumes of hydrogen chloride, and nitrogen oxides.

Special Remarks on Explosion Hazards: Not available.

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#### 6. ACCIDENTAL RELEASE MEASURES

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**Small Spill:** Use appropriate tools to put the spilled solid in a convenient waste disposal container.

**Large Spill:** Poisonous solid. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal. Be careful that

the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

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## 7. HANDLING AND STORAGE

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### Precautions:

Keep away from heat. Keep away from sources of ignition. Do not ingest. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container of the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidising agents, reducing agents, metals, acids, alkalis.

### Storage:

Keep container tightly closed. Keep container in a cool, well-ventilated area.  
Refrigerate

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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### Engineering Controls:

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

### Personal Protection:

Splash goggles. Lab coat. Dust respirator. Be sure to use and approves/certified respirator or equivalent. Gloves. Personal Protection in Case of a Large Spill: Splash goggles. Full Suit. Dust respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient, consult a specialist BEFORE handling this product.

### Exposure Limits:

TWA: 2 (9mg/m<sup>3</sup>) [Canada] TWA: 2 (mg/m<sup>3</sup>) from ACGIH (TLV) [United States]  
TWA: 2 (mg/m<sup>3</sup>) from NIOSH [United States]  
TWA: 2 (mg/m<sup>3</sup>) from OSHA (PEL) [United states] TWA: 2 (mg/m<sup>3</sup>) [France]  
TWA:2 (mg/m<sup>3</sup>) [Belgium] TWA: 2 (mg/m<sup>3</sup>) [Switzerland] TWA: 2 (mg/m<sup>3</sup>) [United Kingdom (UK)]<sup>3</sup>  
consult local authorities for acceptable exposure limits.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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Physical state and appearance: Yellowish transparent liquid.

Specific gravity: 1.07g/cm<sup>3</sup> (at 25°)

Behaviour in water: Soluble

PH: 4-6

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## 10. STABILITY AND REACTIVITY

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Stability: The product is stable.

Instability Temperature: Not available

PLANT. CULTIVATE. HARVEST

Conditions of Instability:

STABLE BELOW 10°C, Will POLYMERIZE AT TEMPERATURES ABOVE 25°C, incompatible materials, moisture, flames (ignition sources)

Incompatibility with various substances: Reactive with oxidizing agents, reducing agents, metals, acids, alkalis.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:

Also incompatible with temperatures above 104°F (40°), 1,2-phenylene diamine salts, moisture.

Contact with acid or acid fumes, emit toxic fumes. It is thermally unstable. At higher temperatures, particularly above the melting point (at approximately 122°), decompositions (polymerization) to dicyandiamide and urea becomes rapid. Above 40°C, violent thermal decomposition will occur. It attacks various metals; i.e., brass, copper, iron, lead and tin plate.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur if stored at temperatures below 25°C. However it will occur at higher temperatures, particularly above 40°C.

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## 11. TOXICOLOGICAL INFORMATION

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Routes of Entry: Absorbed through skin. Dermal contact. Inhalation. Ingestion. Oral LD<sub>50</sub>: >142 mg/kg (a.i.)

Dermal L D<sub>50</sub>: 800-1400mg/kg (a.i)

Inhalation: L D<sub>50</sub>, >0.7mg/L

Skin irritation: Corrosive

Eye irritation: Corrosive

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## 12. ECOLOGICAL AND ECOTOXICOLOGICAL INFORMATION

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Ecotoxicity: Not available.

8005 and COD: Not available.

Products of Biodegradation:

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

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## 13. DISPOSAL CONSIDERATIONS

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Waste must be disposed of in accordance with federal, state and local environmental control regulations.

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**14. TRANSPORT INFORMATION**

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DOT Classification: Poisonous material.

Identification: Cyanamide, inorganic solid, n.o.s. (Cyanamide) Special Provisions for Transport: Not available

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**15. REGULATORY INFORMATION**

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Federal and State Regulations: Illinois toxic substances disclosure to employee act: Cyanamide Rhode Island RTK hazardous substances: Cyanamide Pennsylvania RTK: Cyanamide Florida: Cyanamide Minnesota: Cyanamide Massachusetts RTK:

Cyanamide New Jersey: Cyanamide TSCA 8 (b) inventory: Cyanamide

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200)

Other Classifications:

WHMIS (Canada):

CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC).

CLASS D-2B: Material causing other toxic effects (TOXIC).

DSCL (EEC):

R21- Harmful in contact with skin. R25- Toxic if swallowed. R36/38 irritating to eyes and skin. R43- May cause sensitization by skin contact. S3- Keep in a cool place.

S22- Do not breathe dust. S36/37- Wear suitable protective clothing and gloves. S45-

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 1

Reactivity: 0

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 4

Flammability: 1

Reactivity: 0

Specific hazard:

Protective Equipment:

Gloves: Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

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**16. OTHER INFORMATION**

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This Material Safety Data Sheet contains important environmental, health and toxicology information for your employees, and anyone who will use, transport, store, dispose of or handle this product. Please note: we believe that the information and recommendations contained herein are accurate as of the date hereof. The information provided herein applies only to the specific product designated and may not be valid where said product is used in combination with any other material or in any process. It is the user's responsibility to determine the suitability of the information for their purposes. No warranty of fitness for any particular purpose, warranty of merchantability, or any other warranty, expressed or implied, is made concerning the information provided.

