

# Avocado Research Chemicals Ltd - Material Safety Data Sheet 20813

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|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------|
| 1. IDENTIFICATION OF SUBSTANCE AND SUPPLIER   |                                                                                                                                                                                                                                                      |                    |         |
| Name On Label                                 | N,N'-Di-n-hexylthiourea                                                                                                                                                                                                                              |                    |         |
| Product Number                                | 20813                                                                                                                                                                                                                                                |                    |         |
| Supplier                                      | Johnson Matthey Catalog Company Inc.<br>30 Bond Street, Ward Hill, Massachusetts, 01835-8099<br>Emergency Telephone Number: (978) 521-6300; CHEMTREC: (800) 424-9300                                                                                 |                    |         |
| Alternative Names                             | None in common use.                                                                                                                                                                                                                                  |                    |         |
| 2. COMPOSITION AND INFORMATION ON COMPONENTS  |                                                                                                                                                                                                                                                      |                    |         |
| Name                                          | N,N'-Di-n-hexylthiourea                                                                                                                                                                                                                              |                    |         |
| Minor Impurities                              | Not determined                                                                                                                                                                                                                                       |                    |         |
| CAS No.                                       | 21071-28-3                                                                                                                                                                                                                                           | EINECS No. 2441910 | EEC No. |
| 3. HAZARDS IDENTIFICATION                     |                                                                                                                                                                                                                                                      |                    |         |
| Designation                                   | HARMFUL                                                                                                                                                                                                                                              |                    |         |
| Risk Phrases                                  | R20/21/22 Harmful by inhalation, in contact with skin and if swallowed.                                                                                                                                                                              |                    |         |
| 4. FIRST AID MEASURES                         |                                                                                                                                                                                                                                                      |                    |         |
| Inhalation                                    | Remove to fresh air. Seek medical advice if symptoms persist.                                                                                                                                                                                        |                    |         |
| Eye Contact                                   | Flush with copious amounts of water for at least 15 minutes. If symptoms arise, seek medical advice.                                                                                                                                                 |                    |         |
| Skin Contact                                  | Remove contaminated clothing. Wash affected area with soap and water. Rinse thoroughly. If unusual symptoms are observed, seek medical advice. Show the physician the container details.                                                             |                    |         |
| Ingestion                                     | Rinse out mouth and drink lots of water. In case of unusual symptoms, seek medical attention and show physician the container details.                                                                                                               |                    |         |
| 5. FIRE FIGHTING MEASURES                     |                                                                                                                                                                                                                                                      |                    |         |
| Extinguishing Medium                          | Use fire fighting measures which suit the environment and take into account other materials which may be involved. In general, water-based extinguishers should not be used for fires involving organic materials. Use carbon dioxide or dry powder. |                    |         |
| Protective Equipment                          | Wear self-contained breathing apparatus and protective clothing.                                                                                                                                                                                     |                    |         |
| Hazardous Products of Combustion may include: | carbon monoxide, carbon dioxide, oxides of nitrogen, nitric acid, sulfur dioxide, sulfuric acid, hydrogen cyanide.                                                                                                                                   |                    |         |
| 6. ACCIDENTAL RELEASE MEASURES                |                                                                                                                                                                                                                                                      |                    |         |
| Personal Protection                           | Avoid inhalation or contact of spilled material with skin or clothing. Wear protective equipment including rubber gloves, and eye protection. Keep unprotected persons away.                                                                         |                    |         |
| Environmental Protection                      | Take precautions to ensure product does not contaminate the ground or enter the drainage system.                                                                                                                                                     |                    |         |
| Collection                                    | Mix with vermiculite or proprietary absorbent material and transfer to sealed containers for disposal.                                                                                                                                               |                    |         |
| 7. HANDLING AND STORAGE                       |                                                                                                                                                                                                                                                      |                    |         |
| Handling                                      | Chemicals should be used only by those trained in handling potentially hazardous materials. Rubber gloves, eye protection and protective clothing should be worn. Operations should be carried out in an efficient fume hood or equivalent system.   |                    |         |
| Storage                                       | Store in tightly sealed containers in a cool place.<br>Protect from moisture.                                                                                                                                                                        |                    |         |
| 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION  |                                                                                                                                                                                                                                                      |                    |         |
| Respiratory                                   | Avoid inhalation of product. Handle in an efficient fume hood or equivalent system.                                                                                                                                                                  |                    |         |
| Eye                                           | Avoid eye contact. Wear safety spectacles or goggles.                                                                                                                                                                                                |                    |         |
| Hands and Body                                | Avoid skin contact. Wear rubber gloves and protective clothing.                                                                                                                                                                                      |                    |         |

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| 9. PHYSICAL AND CHEMICAL PROPERTIES                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                    |             |                   |                      |
| Appearance                                                                                                                                                                                                                                                                                                                                                                                                           | Solid                                                                                                                                                              |             |                   |                      |
| Physical Constants                                                                                                                                                                                                                                                                                                                                                                                                   | m.p. 39-41°                                                                                                                                                        |             |                   |                      |
| Molecular formula                                                                                                                                                                                                                                                                                                                                                                                                    | C <sub>13</sub> H <sub>28</sub> N <sub>2</sub> S                                                                                                                   | Formula Wt. | 244.44            |                      |
| Water solubility                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                    | Density     | Not available     |                      |
| Flash Point                                                                                                                                                                                                                                                                                                                                                                                                          | Not available                                                                                                                                                      |             |                   |                      |
| 10. STABILITY AND REACTIVITY                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                    |             |                   |                      |
| Specific Hazard                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                    |             |                   |                      |
| Incompatibilities                                                                                                                                                                                                                                                                                                                                                                                                    | Strong oxidising agents.                                                                                                                                           |             |                   |                      |
| Decomposition                                                                                                                                                                                                                                                                                                                                                                                                        | Hazardous products of decomposition may include:carbon monoxide, carbon dioxide, oxides of nitrogen, nitric acid, sulfur dioxide, sulfuric acid, hydrogen cyanide. |             |                   |                      |
| 11. TOXICOLOGICAL INFORMATION                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                    |             |                   |                      |
| RTECS No.                                                                                                                                                                                                                                                                                                                                                                                                            | Not listed                                                                                                                                                         |             |                   |                      |
| Acute Toxicity                                                                                                                                                                                                                                                                                                                                                                                                       | LD <sub>50</sub> : No data reported<br>Harmful by inhalation, in contact with skin and if swallowed.                                                               |             |                   |                      |
| 12. ECOLOGICAL EFFECTS                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                    |             |                   |                      |
| General                                                                                                                                                                                                                                                                                                                                                                                                              | Take care to prevent chemicals from entering the ground, water courses or drainage systems.                                                                        |             |                   |                      |
| 13. DISPOSAL CONSIDERATIONS                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                    |             |                   |                      |
| Disposal                                                                                                                                                                                                                                                                                                                                                                                                             | Disposal should be via an approved contractor and should take full account of local regulations.                                                                   |             |                   |                      |
| 14. TRANSPORT INFORMATION                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                    |             |                   |                      |
| UN Number                                                                                                                                                                                                                                                                                                                                                                                                            | 2811                                                                                                                                                               |             |                   |                      |
| Land Transport                                                                                                                                                                                                                                                                                                                                                                                                       | ADR/RIC Code/Class                                                                                                                                                 | 6.1         | Packing Group III |                      |
| Maritime Transport                                                                                                                                                                                                                                                                                                                                                                                                   | IMDG Code/Class                                                                                                                                                    | 6.1         | Packing Group III |                      |
| Air Transport                                                                                                                                                                                                                                                                                                                                                                                                        | IATA Code/Class                                                                                                                                                    | 6.1         | Packing Group III |                      |
| 15. REGULATORY INFORMATION                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                    |             |                   |                      |
| CAS No. 21071-28-3                                                                                                                                                                                                                                                                                                                                                                                                   | EINECS No. 2441910                                                                                                                                                 | EEC No.     | UN No. 2811       | RTECS No. Not listed |
| Hazard Indication                                                                                                                                                                                                                                                                                                                                                                                                    | HARMFUL                                                                                                                                                            |             |                   |                      |
| Risk & Safety Phrases                                                                                                                                                                                                                                                                                                                                                                                                | Harmful by inhalation, in contact with skin and if swallowed.<br>Wear suitable protective clothing.                                                                |             |                   |                      |
| TSCA                                                                                                                                                                                                                                                                                                                                                                                                                 | Not listed. For research and development use only.                                                                                                                 |             |                   |                      |
| 16. OTHER INFORMATION                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                    |             |                   |                      |
| It must be recognised that the physical and chemical properties of any product may not be fully understood and that new, possibly hazardous products may arise from reactions between chemicals. The information given in this data sheet is based on our present knowledge and shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship. |                                                                                                                                                                    |             |                   |                      |
| Date of Last Review:                                                                                                                                                                                                                                                                                                                                                                                                 | 3rd August 1998                                                                                                                                                    |             | Date Printed:     | 18th September 1998  |