

# Avocado Research Chemicals Ltd - Material Safety Data Sheet 16706

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| 1. IDENTIFICATION OF SUBSTANCE AND SUPPLIER                                                                         |                                                                                                                                                                                                                                                      |                    |         |
| Name On Label                                                                                                       | Dimethyl bromomalonate, tech., 90%                                                                                                                                                                                                                   |                    |         |
| Product Number                                                                                                      | 16706                                                                                                                                                                                                                                                |                    |         |
| 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                                                                                                   | Bromomalonic acid dimethyl ester                                                                                                                                                                                                                     |                    |         |
| 2. COMPOSITION AND INFORMATION ON COMPONENTS                                                                        |                                                                                                                                                                                                                                                      |                    |         |
| Name                                                                                                                | Dimethyl bromomalonate, tech., 90%                                                                                                                                                                                                                   |                    |         |
| Minor Impurities                                                                                                    | Not determined                                                                                                                                                                                                                                       |                    |         |
| CAS No.                                                                                                             | 868-26-8                                                                                                                                                                                                                                             | EINECS No. 2127754 | EEC No. |
| 3. HAZARDS IDENTIFICATION                                                                                           |                                                                                                                                                                                                                                                      |                    |         |
| Designation                                                                                                         | HARMFUL ~ CORROSIVE ~ LACHRYMATORY                                                                                                                                                                                                                   |                    |         |
| Risk Phrases                                                                                                        | R20/21/22 Harmful by inhalation, in contact with skin and if swallowed.<br>R34 Causes burns.<br>R36/37 Irritating to eyes and respiratory system.                                                                                                    |                    |         |
| 4. FIRST AID MEASURES                                                                                               |                                                                                                                                                                                                                                                      |                    |         |
| Inhalation                                                                                                          | Remove to fresh air. If breathing is difficult give oxygen and seek medical attention.                                                                                                                                                               |                    |         |
| Eye Contact                                                                                                         | Flush with copious amounts of water for at least 15 minutes. Seek urgent medical attention.                                                                                                                                                          |                    |         |
| Skin Contact                                                                                                        | Remove contaminated clothing. Wash affected area with soap and water. Rinse thoroughly. In case of skin damage seek urgent medical advice. Show the physician the container details.                                                                 |                    |         |
| Ingestion                                                                                                           | Rinse out mouth and drink lots of water. In case of tissue damage or other symptoms, seek medical attention.                                                                                                                                         |                    |         |
| 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, hydrogen bromide (hydrobromic acid). |                                                                                                                                                                                                                                                      |                    |         |
| 6. ACCIDENTAL RELEASE MEASURES                                                                                      |                                                                                                                                                                                                                                                      |                    |         |
| Personal Protection                                                                                                 | Avoid inhalation or contact of vapour with eyes. Wear protective equipment including rubber gloves, safety goggles or breathing equipment. 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>Product reacts with water. Take precautions to avoid contact with atmospheric 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, goggles or, for larger quantities, a full face mask.                                                                                                                                                      |                    |         |
| Hands and Body                                                                                                      | Corrosive product. Avoid skin contact. Wear corrosive-resitant gloves and, for larger quantities, full arm and body protection. Wash hands thoroughly after handling.                                                                                |                    |         |

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| 9. PHYSICAL AND CHEMICAL PROPERTIES                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                            |               |                                  |
| Appearance                                                                                                                                                                                                                                                                                                                                                                                                           | Colorless liquid                                                                                                                                                                                                                                                                                                                                           |               |                                  |
| Physical Constants                                                                                                                                                                                                                                                                                                                                                                                                   | b.p. 78-82°/0.2mm                                                                                                                                                                                                                                                                                                                                          |               |                                  |
| Molecular formula                                                                                                                                                                                                                                                                                                                                                                                                    | C <sub>5</sub> H <sub>7</sub> BrO <sub>4</sub>                                                                                                                                                                                                                                                                                                             | Formula Wt.   | 211.01                           |
| Water solubility                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                            | Density       | 1.602                            |
| Flash Point                                                                                                                                                                                                                                                                                                                                                                                                          | >110°                                                                                                                                                                                                                                                                                                                                                      |               |                                  |
| 10. STABILITY AND REACTIVITY                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                            |               |                                  |
| Specific Hazard                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                            |               |                                  |
| Incompatibilities                                                                                                                                                                                                                                                                                                                                                                                                    | Strong oxidising agents.                                                                                                                                                                                                                                                                                                                                   |               |                                  |
| Decomposition                                                                                                                                                                                                                                                                                                                                                                                                        | Hazardous products of decomposition may include:carbon monoxide, carbon dioxide, hydrogen bromide (hydrobromic acid).                                                                                                                                                                                                                                      |               |                                  |
| 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. Causes burns. Irritating to eyes and respiratory system.                                                                                                                                                                                              |               |                                  |
| Special Note                                                                                                                                                                                                                                                                                                                                                                                                         | Causes burns. Material is extremely destructive to mucous membranes, upper respiratory tract, eyes and skin. Inhalation may be fatal. Symptoms may include burning sensation, coughing, wheezing, laryngitis, headache, nausea and vomiting.                                                                                                               |               |                                  |
| 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                                                                                                                                                                                                                                                                                                                                                                                                            | 1760                                                                                                                                                                                                                                                                                                                                                       |               |                                  |
| Land Transport                                                                                                                                                                                                                                                                                                                                                                                                       | ADR/RIC Code/Class                                                                                                                                                                                                                                                                                                                                         | 8             | Packing Group II                 |
| Maritime Transport                                                                                                                                                                                                                                                                                                                                                                                                   | IMDG Code/Class                                                                                                                                                                                                                                                                                                                                            | 8             | Packing Group II                 |
| Air Transport                                                                                                                                                                                                                                                                                                                                                                                                        | IATA Code/Class                                                                                                                                                                                                                                                                                                                                            | 8             | Packing Group II                 |
| 15. REGULATORY INFORMATION                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                            |               |                                  |
| CAS No. 868-26-8                                                                                                                                                                                                                                                                                                                                                                                                     | EINECS No. 2127754                                                                                                                                                                                                                                                                                                                                         | EEC No.       | UN No. 1760 RTECS No. Not listed |
| Hazard Indication                                                                                                                                                                                                                                                                                                                                                                                                    | HARMFUL ~ CORROSIVE ~ LACHRYMATORY                                                                                                                                                                                                                                                                                                                         |               |                                  |
| Risk & Safety Phrases                                                                                                                                                                                                                                                                                                                                                                                                | Harmful by inhalation, in contact with skin and if swallowed.<br>Causes burns.<br>Irritating to eyes and respiratory system.<br>In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.<br>Take off immediately all contaminated clothing.<br><br>Wear suitable protective clothing, gloves and eye/face protection. |               |                                  |
| 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              |