

SAFETY DATA SHEET**PRODUCT: OPTIMUM ABRA**

Date of issue: 18/01/2023

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Version: 1.002

1. PRODUCT INFORMATION

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| 1.1 Product Identifier: | Optimum ABRA (Azospirillum Brasilense) |
| 1.2 Relevant uses: | For application to soil/seed at or prior to sowing. Microbial plant Biostimulant. |
| 1.3 Supplier details: | |
| Company Details | |
| Name: Ad Terram Treatment Technologies B.V. | Emergency Tel. No. +31(0)228 593813 (after hours) |
| Address: Kleingouw 126, 1619 CJ, ANDIJK | Postal Address: Kleingouw 126, 1619 CJ, ANDIJK |
| Tel. No. +31 (0)228 593813 | E-mail Address: info@ad-terram.nl |

2. HAZARDS IDENTIFICATION**2.1 Classification of the substance or mixture:**

There are no components in this product at concentrations which require notification per OSHA Hazard Communications Standard 29 CFR 1910.1200.

2.2 Label elements:

The substance is not dangerous according to the criteria in EU classification directive 67/548/EEC and it is as per the REACH compliance.

2.3 Other hazards:

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|---|----------------|
| Dangerous goods class & subsidiary risk | Not applicable |
| Hazchem code: | Not applicable |
| Hazard class: | Not applicable |
| Risk phrases | Not applicable |
| Safety phrases: | Not applicable |

3. COMPOSITION**3.1 Substances**

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|-----------------------|----------------------------------|
| Hazardous Components: | None |
| Composition: | All components are non-hazardous |



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| Ingredient (common name): | Azospirillum Brasilense (Non-Pathogenic Bacteria) |
| CAS Number: | N/A |

3.2 Mixtures

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| Hazardous Components: | None |
| Composition: | All components are non-hazardous |

4. FIRST AID MEASURES
4.1 First aid measures

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| Product In Eye: | Avoid contact with eyes. May irritate the eyes. Flush eyes with flowing water for at least 15 minutes. If irritation persists, continue to flush with flowing water and seek medical attention. |
| Product On Skin: | If irritation develops seek medical attention. Remove and wash contaminated clothing before reuse. |
| Product Inhalation: | If difficulty in breathing occurs, move affected person to fresh air. Loosen clothing to ease breathing. Seek immediate medical attention. |
| Product Ingested: | If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. |

4.2 Most important symptoms and effects, both acute and delayed

Not applicable.

4.3 Indication of any immediate medical attention and special treatment needed

Not applicable.

5. FIRE FIGHTING MEASURES

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| 5.1 Extinguishing Media Fires: | For major fires call the Fire Brigade. Ensure that an escape path is available from any fire. |
| 5.2 Special hazards | |
| Flammability: | May be combustible at high temperatures |
| Products of combustion: | Suitable extinguishing media Foam, alcohol foam, CO ₂ , dry chemical, water fog. |
| Hazardous combustion products | Burning will not create noxious fumes. |



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| Explosion Hazards in presence of mechanical impact or static discharge: | Not a fire or explosion hazard when stored under normal conditions. |
| 5.3 Advice for firefighters | |
| Protective Clothing: | Fire fighters should wear butyl rubber boots, gloves and body suit and a self-contained breathing apparatus. |

6. ACCIDENTAL RELEASE MEASURES

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| 6.1 Personal Precautions: | Advice for non-emergency personnel: Avoid generation and inhalation of dusts in all circumstances. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert. |
| 6.2 Environmental Precautions: | Not applicable. |
| 6.3 Methods and materials for containment and cleaning up: | Wait for dust to settle. Wash off any contaminated surface with water and detergent. Use disinfectants if possible. |

7. HANDLING AND STORAGE

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| 7.1 Precautions for safe handling: | Do not inhale substance/mixture. |
| 7.2 Conditions for safe storage: | Tightly closed. Dry. Keep in a well-ventilated place. |
| 7.3 Specific end use | This product is only to be used for seed coating and soil treatment |

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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| 8.1 Control Parameters: | |
| Occupational Exposure Limits: | None allocated |
| 8.2 Exposure Controls: | |
| Personal protection - Respiratory: | Wear a half face piece respirator or dust mask. |
| Personal protection - Hands: | Wear protective gloves |
| Personal protection - Eyes: | Chemical goggles, safety glasses or face shield. |
| Personal protection - Skin: | Elbow length rubber gloves, overalls, apron and boots are necessary to prevent skin contact. |
| Hygienic practices: | Open wounds or skin surface disruptions should be covered with a chemical resistant patch to minimize absorption risks. Clean clothing should be worn daily to avoid possible long-term build-up of the product leading to chronic overexposure. Emergency eye wash must be readily available within work area. |



9. PHYSICAL AND CHEMICAL PROPERTIES
9.1 Information on basic physical and chemical properties

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| Appearance: | White Powder |
| Composition: | 5 x 10 ¹⁰ Azospirillum Brasilense |
| Odour: | Mild earthy odour |
| pH: | Neutral |
| Density (SG): | N/A |
| Solubility: | Insoluble |
| Boiling point: | N/A |
| Flash point: | N/A |
| Evaporation rate | N/A |
| Flammable limit: | lower N/A, upper N/A |
| Moisture content | N/A |

10. STABILITY AND REACTIVITY

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| 10.1 Reactivity: | Optimum ABRA is stable under normal conditions for use. |
| 10.2 Chemical Stability: | Not applicable. |
| 10.3 Possibility of hazardous reactions | None. |
| 10.4 Conditions To Avoid: | Extreme heat and oxidizing agents |
| 10.5 Incompatible materials | Avoid storage with compounds that will react with aluminium foil cap or butyl rubber bung. |
| 10.6 Hazardous decomposition products | Will not emit noxious fumes. |
| 10.7 Hazardous polymerization | Will not occur. |
| 10.8 Conditions to avoid | Extremes in temperature. Direct sunlight. |

11. TOXICOLOGICAL INFORMATION
11.1 Information on toxicological effects

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| Routes of exposure: | Ingestion, inhalation, eyes, and skin. |
| Ingestion: | Maybe harmful if swallowed. |
| Inhalation: | Prolonged inhalation may lead to respiratory tract irritation. |
| Eye: | Prolonged or repeated exposure may cause mechanical irritation. |
| Skin | Prolonged or repeated exposure may cause irritation, redness, and inflammation. |



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| Effects of overexposure | Long term exposure may cause mechanical irritation of the eyes as well as skin and respiratory tract irritation |
| Existing conditions | Aggravated by exposure May provoke asthmatic response in persons with asthma who are sensitive to airway irritants. |
| Carcinogenicity | No information available. |

12. ECOLOGICAL INFORMATION

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| 12.1 Ecotoxicity: | Test studies have shown that Optimum ABRA is not dangerous to the environment with respect to mobility, persistency and degradability, bio-accumulative potential, aquatic toxicity and other data relating to eco-toxicity |
| 12.2 Persistence and biodegradability: | Non-persistent, fully biodegradable |
| 12.3 Bioaccumulative potential: | Does not bioaccumulate |
| 12.4 Mobility in soil: | No data available |
| 12.5 Results of PBT and vPvB assessment: | No data available |
| 12.6 Other adverse effects | Not applicable |

13. DISPOSAL CONSIDERATION

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| 13.1 Waste treatment methods: | Non-hazardous waste. Dispose of according to local legislation |
| 13.2 Disposal Methods | Dispose according to applicable local and government regulations. Dispose of in a local authority landfill. Dispose of empty packaging by wrapping and placing in the garbage disposal system. Do not contaminate streams, rivers, or waterways. |



14. TRANSPORT INFORMATION

Not classified as a dangerous good according to the Australian Code for the Transport of Dangerous Goods by road or rail.

14.1 UN number: Not applicable

14.2 UN Proper shipping name: Not applicable

14.3 Transport hazard class: Not applicable

14.4 Packing group: Not applicable

14.5 Environmental hazards: Negligible

14.6 Special precautions for user: Not applicable

15. REGULATORY INFORMATION

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| 15.1 Safety, health and environmental regulations/ legislation specific for the substance or mixture: | The preparation is not classified as "dangerous" according to the criteria of Council Directives 67/548/EEC (Annex VI of Directive 2001/59/EC) and 1999/45/EC. Microbial classification The preparation is not deemed 'hazardous' according to the requirements of Council Directive 2000/54/EEC. Bacteria contained in this preparation are designated Class 1 according to Council Directive 90/679/EEC (as amended by Council Directive 93/88/EEC) and all other recognized classification systems for micro-organisms |
| 15.2 Chemical Safety assessment | Not applicable |

16. OTHER INFORMATION

The information contained in this material safety data sheet is provided in good faith and is believed to be accurate at the date of issue. Ad Terram Treatment Technologies makes no representation of the accuracy or comprehensiveness of the information and to the full extent allowed by law excludes all liability for any loss or damage related to the supply or use of the information in this material safety data sheet. The user is cautioned to make their own determinations as to the suitability of the information provided to the particular circumstances in which the product is used. Please read the product label before using the product

17. PREPARED BY

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