

SAFETY DATA SHEET

1. Identification

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|---------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product identifier | Human CTLA-4 Alexa Fluor Plus 647 MAb (Clone 2188A) |
| Other means of identification | |
| Product code | FAB3252AFP647 |
| Recommended use | For research use only |
| Recommended restrictions | None known. |
| Manufacturer/Importer/Supplier/Distributor information | |
| Company name | R&D Systems, Inc., a Bio-Techne Brand |
| Address | 614 McKinley Place NE Minneapolis, MN 55413 USA |
| Telephone | 1-800-343-7475 |
| Email | info@bio-techne.com |
| Emergency phone number | For chemical emergency, spill, leak, fire, exposure, or accident call CHEMTREC day or night: Within U.S. 1-703-741-5970 Worldwide 1-800-424-9300 Bio-Techne Tel: US: 612-379-2956 or 800-343-7475 |

2. Hazard(s) identification

Hazards for the product as sold

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|------------------------------|-----------------|
| Physical hazards | Not classified. |
| Health hazards | Not classified. |
| Environmental hazards | Not classified. |
| OSHA defined hazards | Not classified. |

Label elements

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|--------------------------------------------------|------------------------------------------------------------|
| Hazard symbol | None. |
| Signal word | None. |
| Hazard statement | The mixture does not meet the criteria for classification. |
| Precautionary statement | |
| Prevention | Not available. |
| Response | Not available. |
| Storage | Not available. |
| Disposal | Not available. |
| Hazard(s) not otherwise classified (HNOC) | None known. |
| Supplemental information | None. |

3. Composition/information on ingredients

Mixtures

| Chemical name | Common name and synonyms | CAS No./Unique ID | % |
|------------------------------------------|--------------------------|-------------------|--------|
| Sodium azide | | 26628-22-8 | ≤ 0.1* |
| Other components below reportable levels | | | 99.91 |

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

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| Inhalation | Move to fresh air. Call a physician if symptoms develop or persist. |
| Skin contact | Wash off with soap and water. Get medical attention if irritation develops and persists. |

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| Eye contact | Rinse with water. Get medical attention if irritation develops and persists. |
| Ingestion | Rinse mouth. Get medical attention if symptoms occur. |
| Most important symptoms/effects, acute and delayed | Direct contact with eyes may cause temporary irritation. |
| Indication of immediate medical attention and special treatment needed | Treat symptomatically. |
| General information | Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. |

5. Fire-fighting measures

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|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Suitable extinguishing media | Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂). |
| Unsuitable extinguishing media | Do not use water jet as an extinguisher, as this will spread the fire. |
| Specific hazards arising from the chemical | During fire, gases hazardous to health may be formed. |
| Special protective equipment and precautions for firefighters | Self-contained breathing apparatus and full protective clothing must be worn in case of fire. |
| Fire fighting equipment/instructions | Move containers from fire area if you can do so without risk. |
| Specific methods | Use standard firefighting procedures and consider the hazards of other involved materials. |
| General fire hazards | No unusual fire or explosion hazards noted. |

6. Accidental release measures

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| Personal precautions, protective equipment and emergency procedures | Keep unnecessary personnel away. For personal protection, see section 8 of the SDS. |
| Methods and materials for containment and cleaning up | <p>Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.</p> <p>Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.</p> <p>Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.</p> |
| Environmental precautions | Avoid discharge into drains, water courses or onto the ground. |

7. Handling and storage

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| Precautions for safe handling | Avoid prolonged exposure. Observe good industrial hygiene practices. |
| Conditions for safe storage, including any incompatibilities | Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). |

8. Exposure controls/personal protection

Occupational exposure limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

US. ACGIH Threshold Limit Values (TLV)

| Components | Type | Value |
|-------------------------------|---------|------------------------|
| Sodium azide (CAS 26628-22-8) | Ceiling | 0.29 mg/m ³ |
| | | 0.11 ppm |

US. NIOSH: Pocket Guide to Chemical Hazards Recommended Exposure Limits (REL)

| Components | Type | Value |
|-------------------------------|---------|-----------------------|
| Sodium azide (CAS 26628-22-8) | Ceiling | 0.3 mg/m ³ |

US. NIOSH: Pocket Guide to Chemical Hazards Recommended Exposure Limits (REL)

| Components | Type | Value |
|------------|------|---------|
| | | 0.1 ppm |

Biological limit values No biological exposure limits noted for the ingredient(s).

Exposure guidelines**US - California OELs: Skin designation**

Sodium azide (CAS 26628-22-8) Can be absorbed through the skin.

US - Tennessee OELs: Skin designation

Sodium azide (CAS 26628-22-8) Can be absorbed through the skin.

US NIOSH Pocket Guide to Chemical Hazards: Skin designation

Sodium azide (CAS 26628-22-8) Can be absorbed through the skin.

Appropriate engineering controls

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Wear appropriate chemical resistant gloves. Glove material: Nitrile rubber. Use gloves with breakthrough time of 480 minutes. Minimum glove thickness 0.11 mm.

Other Wear suitable protective clothing.

Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Physical state Liquid.

Form Liquid.

Color Clear.

Odor Slight. None.

Melting point/freezing point Not available.

Boiling point or initial boiling point and boiling range 211.95 °F (99.97 °C) estimated

Flammability Not applicable.

Upper/lower flammability or explosive limits

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Flash point Not available.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

pH 6

Kinematic viscosity Not available.

Solubility

Solubility (water) Not available.

Partition coefficient (n-octanol/water) Not available.

Vapor pressure Not available.

Density and/or relative density

Density 1.02 g/cm³ estimated

| | |
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| Vapor density | Not available. |
| Particle characteristics | Not available. |
| Other information | |
| Specific gravity | 1.02 estimated |

10. Stability and reactivity

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|------------------------------------|-----------------------------------------------------------------------------------------------|
| Reactivity | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| Chemical stability | Material is stable under normal conditions. |
| Possibility of hazardous reactions | No dangerous reaction known under conditions of normal use. |
| Conditions to avoid | Contact with incompatible materials. |
| Incompatible materials | Strong oxidizing agents. |
| Hazardous decomposition products | No hazardous decomposition products are known. |

11. Toxicological information

Information on likely routes of exposure

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|--------------|----------------------------------------------------------|
| Inhalation | Prolonged inhalation may be harmful. |
| Skin contact | Prolonged skin contact may cause temporary irritation. |
| Eye contact | Direct contact with eyes may cause temporary irritation. |
| Ingestion | Expected to be a low ingestion hazard. |

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|------------------------------------------------------------------------------|----------------------------------------------------------|
| Symptoms related to the physical, chemical and toxicological characteristics | Direct contact with eyes may cause temporary irritation. |
|------------------------------------------------------------------------------|----------------------------------------------------------|

Information on toxicological effects

Acute toxicity

| Components | Species | Test Results |
|-------------------------------|---------|----------------------------|
| Sodium azide (CAS 26628-22-8) | | |
| Acute | | |
| Dermal | | |
| LD50 | Rabbit | 18 mg/kg |
| Inhalation | | |
| <i>Dust</i> | | |
| LC50 | Rat | 0.054 - 0.52 mg/l, 4 hours |
| Oral | | |
| LD50 | Rat | 10 mg/kg |

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|---------------------------|--------------------------------------------------------|
| Skin corrosion/irritation | Prolonged skin contact may cause temporary irritation. |
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Corrosivity

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|--------------|-----------------------------------------------|
| Sodium azide | Result: No skin irritation. Species: Human |
|--------------|-----------------------------------------------|

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|-----------------------------------|----------------------------------------------------------|
| Serious eye damage/eye irritation | Direct contact with eyes may cause temporary irritation. |
|-----------------------------------|----------------------------------------------------------|

Respiratory or skin sensitization

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|---------------------------|-----------------------------------------------------------|
| Respiratory sensitization | Not a respiratory sensitizer. |
| Skin sensitization | This product is not expected to cause skin sensitization. |

Sensitization

| | |
|--------------|----------------------------------------------------------------------------------------------------------------------|
| Sodium azide | Local lymph node assay (LLNA), OECD Test Guideline 429 Result: Negative. Species: Mouse Organ: Skin contact |
|--------------|----------------------------------------------------------------------------------------------------------------------|

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Mutagenicity

Sodium azide

Bacterial reverse mutation assay (AMES)

Result: Positive.

Chromosome aberration test in vitro

Result: Negative.

In vitro mammalian cell gene mutation test

Result: Negative.

In vitro sister chromatid exchange assay in mammalian cells

Result: Negative.

Carcinogenicity Not classifiable as to carcinogenicity to humans.

Sodium azide

Result: Negative.

Species: Rat

Organ: Ingestion

Test Duration: 103 weeks

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not an aspiration hazard.

Chronic effects Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

| Components | Species | Test Results |
|-------------------------------|-------------------------------------|---------------------|
| Sodium azide (CAS 26628-22-8) | | |
| <i>Acute</i> | | |
| Other | EC50 Pseudokirchnerella subcapitata | 0.35 mg/l, 96 hours |
| <i>Aquatic</i> | | |
| <i>Acute</i> | | |
| Crustacea | EC50 Daphnia pulex | 4.2 mg/l, 48 hours |
| Fish | LC50 Lepomis macrochirus | 0.68 mg/l, 96 hours |

Persistence and degradability No data is available on the degradability of any ingredients in the mixture.

Bioaccumulative potential No data available.

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

US RCRA Hazardous Waste P List: Reference

Sodium azide (CAS 26628-22-8)

P105

Waste from residues / unused products

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.

Contaminated packaging

Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to IMO instruments

Not established.

15. Regulatory information

US federal regulations

This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Toxic Substances Control Act (TSCA)

One or more components of the mixture are not on the TSCA 8(b) inventory or are designated "inactive".

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Sodium azide (CAS 26628-22-8)

1000 LBS

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

| Chemical name | CAS number | Reportable quantity (pounds) | Threshold planning quantity (pounds) | Threshold planning quantity, lower value (pounds) | Threshold planning quantity, upper value (pounds) |
|---------------|------------|------------------------------|--------------------------------------|---------------------------------------------------|---------------------------------------------------|
| Sodium azide | 26628-22-8 | 1000 | 500 | | |

SARA 311/312 Hazardous chemical

No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

US state regulations

California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

International Inventories

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|-----------------------------|------------------------------------------------------------------------|------------------------|
| Australia | Australian Inventory of Industrial Chemicals (AICIS) | No |
| Canada | Domestic Substances List (DSL) | No |
| Canada | Non-Domestic Substances List (NDSL) | No |
| China | Inventory of Existing Chemical Substances in China (IECSC) | No |
| Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) | No |
| Europe | European List of Notified Chemical Substances (ELINCS) | No |
| Japan | Inventory of Existing and New Chemical Substances (ENCS) | No |
| Korea | Existing Chemicals List (ECL) | No |
| New Zealand | New Zealand Inventory | No |
| Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | No |
| Taiwan | Taiwan Chemical Substance Inventory (TCSI) | No |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | No |

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

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|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Issue date | 06-03-2026 |
| Version # | 01 |
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