

MATERIAL SAFETY DATA SHEET

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: 008-FluoroSurfactant
Product Use: The intended-use of this product consists of mixing with fluorinated fluids for R&D experiments.
Manufacturer's Name: RAN Biotechnologies, Inc.
Address: 100 Cummings Center, Suite 434J
Beverly
MA 01915, USA
Date MSDS Prepared: July 4th, 2013
MSDS Prepared By: Roger Nassar
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SECTION 2 — HAZARDS IDENTIFICATION

NOT CLASSIFIED UNDER GHS

Emergency overview: Inhalation of decomposition products from overheating may cause lung irritation or shortness of breath. Repeat or prolonged skin contact may cause skin irritation and/or dermatitis and sensitization of susceptible persons.

Potential Health Effects:

Eyes: Fluorocarbons may cause eye irritation. Tearing. Discomfort

Carcinogenicity: None of the components present in this material at concentrations equal or greater than 0.1% are listed by IARC, NTP, or OSHA, as carcinogen.

This material is solely for Research and Development Use by professional scientist and experts in handling such materials. This material is not for medical applications and is not a medical grade of material.

SECTION 3 — COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients (%) FluoroSurfactant (100)
CAS Number

SECTION 4 — FIRST AID MEASURES

Skin Contact Wash with soap and plenty of water.
Eye Contact Rinse immediately with plenty of water until irritation subsides. If eye irritation persists consult a specialist.
Inhalation If inhaled, move to fresh air.
Ingestion Never give anything by mouth to an unconscious person. Do not induce vomiting unless directed to do so by a physician or poison control center.
General Advice When symptoms persist or in all cases of doubt seek medical advice.

SECTION 5 — FIRE FIGHTING MEASURES

Flash point Does not flash
Thermal decomposition 170-200 degC (338-392 degF). In fire conditions, toxic decomposition products may be formed.
Means of Extinction Use extinguishing measures that are appropriate for local surrounding environment.
Fire Fighting instructions Wear self-contained breathing apparatus and protective suit. Standard procedure for chemical fires.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Leak and Spill Procedures Soak up with inert absorbent material, e.g. sand, silica gel, sawdust, into tightly closable containers. Label container and dispose of as prescribed.

Do not let product enter drains.

SECTION 7 — HANDLING AND STORAGE

Handling Procedures and Equipment Handle in accordance with good hygiene and safety practice.
Storage Requirements Ensure adequate ventilation of the storage area. Keep containers tightly closed, cool and dry.

SECTION 8 — EXPOSURE CONTROL / PERSONAL PROTECTION

Specific Engineering Controls Ensure adequate ventilation of working area.
Personal Protective Equipment Observe normal standards for handling chemicals. Wash hands before breaks and after work. Wear personal protective equipment appropriate to the task (see below).
Safety goggles. Protective gloves.
No personal respiratory protective equipment normally required. In the case of hazardous fumes, wear self contained breathing apparatus.
Personal protective equipment (PPE) should be selected as appropriate to the nature and aggressiveness of the identified hazard(s). PPE should be regularly inspected for such things as soundness against leaks, bad fitting and possible chemical penetration. Recommended safe user periods should never be exceeded.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Physical form	Liquid
Color	Yellow or colorless
Odor	Very faint or none
Average molecular weight / range	1,000 to 20,000 Da
Molecular formula	Proprietary
pH	Not determined
Boiling pt / range	Not determined
Melting pt / range	Not determined
General Flammability	NON-COMBUSTIBLE
Flash point	Not determined
Auto-ignition temperature	Not determined
Decomposition temperature	Not determined
Relative Density (approximate)	1.8
Explosive properties	Not determined
Oxidizing properties	Not determined
Vapor pressure	Not determined
Vapor Density	Not determined
Relative Evaporation Rate (n-Butyl Acetate = 1)	Not determined
Viscosity	Not determined
Water solubility	Not determined

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Partition coefficient (log P or log K n-octanol / water)	Not determined
Additional information	Not applicable

SECTION 10 — STABILITY AND REACTIVITY

Chemical Stability	Stable under normal conditions of handling.
Incompatible Substances	Strong bases
Reactivity	Avoid Temperatures exceeding 150°C (302°F)
Hazardous Decomposition Products	Not determined

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute toxicity	LD ₅₀ rat (oral) >5,000mg/kg
Acute irritation/corrosivity	Rabbit, skin: NEGLIGIBLE IRRITANCY
Sensitization	No sensitizing effects known.
Repeated dose toxicity	No data available.
CMR effects	No classification data on carcinogenic properties of this product is available from NTP, IARC.
Further information	Consideration should be given to section 15 of this safety data sheet, noting any identified hazards for this product and route of entry whereby harm could be caused to body tissues and organs.

SECTION 12 — ECOLOGICAL INFORMATION

Ecotoxicity	No data available
Mobility	No data available
Persistence and degradability	No data available
Bioaccumulative potential	No data available
Result of PBT assessment	No data available
Other adverse effects	Do not allow to get into waste water or waterways.

Consideration should be given to any environmental or health hazards indicated in section 2, and the physical properties indicated in section 9, of this safety data sheet, in the light of any possible damage to wildlife or to the environment in land, water, air or upper atmosphere.

Water Hazard Class	Not determined
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SECTION 13 — DISPOSAL CONSIDERATIONS

Advice on disposal	In accordance with national and local authority regulations.
Contaminated packaging	Treat empty containers in the same way as the product.
European Waste Catalogue Number	Not determined.
Further information	This product contains fluorine-containing chemicals and it must be incinerated in an industrial or commercial facility in the presence of a combustible material. Combustion products will include HF. The incineration facility must be capable of handling halogenated – particularly fluorinated – materials.

SECTION 14 — TRANSPORT INFORMATION

United Nations number	The product is not classified for transport
Proper shipping name	Not Applicable
Class Subsidiary risk/s	Not Applicable
Packing group	Not Applicable
Marine pollutant	The product is not a marine pollutant per the International Maritime Dangerous Goods IMDG



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Emergency action code	Not Applicable
Hazard Identification Number	Not Applicable
Further information	Not Applicable

SECTION 15 — REGULATORY INFORMATION

Classification & labeling	The product is categorized in accordance with the Classification, Labeling & Packaging Regulation ((EC) No. 1272/2008).
Precautionary statements	P273 Avoid release to the environment. P501 Dispose of contents/container in accordance with national regulation.

Federal Regulations (US)

TSCA Section 8b – Inventory Status:

All chemicals comprising this product are either exempt or listed on the TSCA Inventory.

TSCA Section 12b – Export Notification:

The finished product contains the following chemicals subject to TSCA Section 12b export notification.

Chemical: None **CAS #:** NA

CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT)

Chemicals present in the product which could require reporting under the statute:

Chemical: None **CAS # (RQ):** NA (NA) **Sec. 302 EDS:** No

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT) Section 313

The finished product contains the following chemicals listed in this regulation:

Chemical: None **CAS #:** NA **% Wt:** NA

Section 311/312 HAZARD CATEGORIES

Fire Hazard: NA **Pressure Hazard:** NA **Reactivity Hazard:** NA **Other:** NA

Immediate Hazard: NA **Delayed Hazard:** NA

State Regulations (US)

California Proposition 65

The following chemicals identified to exist in the finished product as distributed into commerce are known to the State of California to cause cancer, birth defects, or other reproductive harm:

Chemical: None **CAS #:** NA **% Wt:** NA

International Regulations

(non-US)

Canadian Domestic Substance List (DSL)

All ingredients remaining in the finished product as distributed into commerce are exempt from, or included on, the Domestic Substances List.

WHMIS Classifications This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the Controlled Products Regulations.

NPRI and Ontario Regulation 127/01

This product contains the following chemicals subject to the reporting requirements of Canada NPRI +/-or Ont. Reg. 127/01:

Chemical: None **CAS #:** NA **% Wt:** NA

European Inventory of Existing Commercial Chemical Substances (EINECS)

All ingredients remaining in the finished product as distributed into commerce are exempt from, or included on, the European Inventory of Existing Commercial Chemical Substances.

SECTION 16 — OTHER INFORMATION

General Summary	This Safety Data Sheet is partly based on information and data available from the original manufacturer(s) of the starting reagents.
Further information	The information in this document refers to hazards associated with the 008-FluoroSurfactant. Reported hazards of the 008-FluoroSurfactant are derived by analogy with materials chemically similar to 008-FluoroSurfactant. This product may be regulated under additional regulations and laws not identified above,

such as for uses other than described or as-designed/as-intended by the manufacturer, or for distribution in specific domestic destinations. Distribution into Quebec to follow Canadian Controlled Product Regulations (CPR) 24(1) and 24(2).

Sources of data

Safety Data Sheets from manufacturers of starting material.
European Chemicals Bureau (EINECS and ELINCS)
International Agency for Research on Cancer (1987), *IARC Monographs on the Evaluation of Carcinogenic Risks to Humans: Overall Evaluations of Carcinogenicity: An updating of IARC Monographs Volumes 1-42, Supplement 7, Lyon, France.*
Ontario Ministry of Labor Regulation 654/86. Regulations Respecting Exposure to Chemical or Biological Agents.
RTECS – Registry of Toxic Effects of Chemical Substances, NIOSH - National Institute for Occupational Safety and Health.
RainDance Technologies, Inc. Safety Data Sheet.

EU Classification
(1999/45/EC)

No Symbol

Preparation Information

Date of preparation: July 4th, 2013
Supersedes: Not Applicable (New)

Disclaimer

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END OF MSDS