



## Safety Data Sheet

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### SECTION 1: Identification

#### 1.1. Product identifier

3M™ NFC Ferrite Isolator AB5012RF-B

#### Product Identification Numbers

XI-0038-5263-3

#### 1.2. Recommended use and restrictions on use

##### Recommended use

Antenna isolation in RFID system

#### 1.3. Supplier's details

<b>MANUFACTURER:</b>	3M
<b>DIVISION:</b>	3M People's Republic of China Electronics Markets Materials Division
<b>ADDRESS:</b>	3M Center, St. Paul, MN 55144-1000, USA
<b>Telephone:</b>	1-888-3M HELPS (1-888-364-3577)

#### 1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

### SECTION 2: Hazard identification

#### 2.1. Hazard classification

Skin Sensitizer: Category 1.

#### 2.2. Label elements

##### Signal word

Warning

##### Symbols

Exclamation mark |

##### Pictograms

**Hazard Statements**

May cause an allergic skin reaction.

**Precautionary Statements****Prevention:**

Avoid breathing dust/fume/gas/mist/vapors/spray.

Wear protective gloves.

Contaminated work clothing must not be allowed out of the workplace.

**Response:**

IF ON SKIN: Wash with plenty of soap and water.

If skin irritation or rash occurs: Get medical advice/attention.

Wash contaminated clothing before reuse.

**Disposal:**

Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

**2.3. Hazards not otherwise classified**

None.

80% of the mixture consists of ingredients of unknown acute oral toxicity.

## SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
nickel zinc ferrate	12645-50-0	57 - 77 Trade Secret *
PET film	25038-59-9	8 - 24
acrylic copolymer	35239-19-1	6 - 20

\*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

## SECTION 4: First aid measures

**4.1. Description of first aid measures****Inhalation:**

No need for first aid is anticipated.

**Skin Contact:**

Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

**Eye Contact:**

No need for first aid is anticipated.

**If Swallowed:**

No need for first aid is anticipated.

#### 4.2. Most important symptoms and effects, both acute and delayed

See Section 11.1. Information on toxicological effects.

#### 4.3. Indication of any immediate medical attention and special treatment required

Not applicable

### SECTION 5: Fire-fighting measures

#### 5.1. Suitable extinguishing media

In case of fire: Use a carbon dioxide or dry chemical extinguisher to extinguish.

#### 5.2. Special hazards arising from the substance or mixture

None inherent in this product.

#### 5.3. Special protective actions for fire-fighters

No special protective actions for fire-fighters are anticipated.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

#### 6.2. Environmental precautions

Avoid release to the environment.

#### 6.3. Methods and material for containment and cleaning up

Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. Dispose of collected material as soon as possible.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

For industrial or professional use only. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.

#### 7.2. Conditions for safe storage including any incompatibilities

Store away from heat. Store away from acids.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### Occupational exposure limits

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
NICKEL, INSOLUBLE COMPOUNDS	12645-50-0	OSHA	TWA(as Ni):1 mg/m <sup>3</sup>	
Nickel, insoluble inorganic compounds	12645-50-0	ACGIH	TWA(as Ni, inhalable fraction):0.2 mg/m <sup>3</sup>	A1: Confirmed human carcin.

NICKEL, SOLUBLE COMPOUNDS	12645-50-0	OSHA	TWA(as Ni):1 mg/m3	
PET film	25038-59-9	CMRG	TWA(as respirable dust):5 mg/m3;TWA(as total dust):10 mg/m3	

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

OSHA : United States Department of Labor - Occupational Safety and Health Administration

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

## 8.2. Exposure controls

### 8.2.1. Engineering controls

Not applicable.

### 8.2.2. Personal protective equipment (PPE)

#### Eye/face protection

None required.

#### Skin/hand protection

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity.

Gloves made from the following material(s) are recommended: Polymer laminate

Select and use body protection to prevent contact based on the results of an exposure assessment. The following protective clothing material(s) are recommended: Apron - polymer laminate

#### Respiratory protection

None required.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

General Physical Form:	Solid
Specific Physical Form:	Sheet
Odor, Color, Grade:	Slight acrylic odor; black color; sheet
Odor threshold	Not Applicable
pH	Not Applicable
Melting point	Not Applicable
Boiling Point	Not Applicable
Flash Point	Not Applicable
Evaporation rate	Not Applicable
Flammability (solid, gas)	Not Classified
Flammable Limits(LEL)	Not Applicable
Flammable Limits(UEL)	Not Applicable
Vapor Pressure	Not Applicable
Vapor Density	Not Applicable
Density	4 - 5 g/cm3
Specific Gravity	4 - 5 [Ref Std: WATER=1]
Solubility in Water	Nil

<b>Solubility- non-water</b>	<i>Not Applicable</i>
<b>Partition coefficient: n-octanol/ water</b>	<i>No Data Available</i>
<b>Autoignition temperature</b>	<i>Not Applicable</i>
<b>Decomposition temperature</b>	<i>Not Applicable</i>
<b>Viscosity</b>	<i>Not Applicable</i>
<b>Percent volatile</b>	<i>Not Applicable</i>

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

### 10.2. Chemical stability

Stable.

### 10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

### 10.4. Conditions to avoid

Heat

High shear and high temperature conditions

Temperatures above the boiling point

### 10.5. Incompatible materials

Reaction with water, alcohols, and amines is not hazardous if container can vent to the atmosphere to prevent pressure buildup.

Strong acids

Water

### 10.6. Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
Carbon monoxide	Oxidation, heat or reaction
Carbon dioxide	Oxidation, heat or reaction

## SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

### 11.1. Information on Toxicological effects

#### Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

#### Inhalation:

No health effects are expected.

#### Skin Contact:

Contact with the skin during product use is not expected to result in significant irritation. Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

#### Eye Contact:

Contact with the eyes during product use is not expected to result in significant irritation.

#### Ingestion:

No health effects are expected.

#### Carcinogenicity:

<u><b>Ingredient</b></u>	<u><b>C.A.S. No.</b></u>	<u><b>Class Description</b></u>	<u><b>Regulation</b></u>
NI CMPDS NOT ALLOYS	12645-50-0	Known human carcinogen	National Toxicology Program Carcinogens
NICKEL COMPOUNDS	12645-50-0	Grp. 1: Carcinogenic to humans	International Agency for Research on Cancer

#### Toxicological Data

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

#### Acute Toxicity

<b>Name</b>	<b>Route</b>	<b>Species</b>	<b>Value</b>
Overall product	Ingestion		No data available; calculated ATE > 5,000 mg/kg
PET film	Dermal		LD50 estimated to be > 5,000 mg/kg
PET film	Ingestion	Rat	LD50 > 5,000 mg/kg

ATE = acute toxicity estimate

#### Skin Corrosion/Irritation

<b>Name</b>	<b>Species</b>	<b>Value</b>
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#### Serious Eye Damage/Irritation

<b>Name</b>	<b>Species</b>	<b>Value</b>
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#### Skin Sensitization

<b>Name</b>	<b>Species</b>	<b>Value</b>
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#### Respiratory Sensitization

<b>Name</b>	<b>Species</b>	<b>Value</b>
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#### Germ Cell Mutagenicity

<b>Name</b>	<b>Route</b>	<b>Value</b>
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#### Carcinogenicity

<b>Name</b>	<b>Route</b>	<b>Species</b>	<b>Value</b>
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#### Reproductive Toxicity

#### Reproductive and/or Developmental Effects

<b>Name</b>	<b>Route</b>	<b>Value</b>	<b>Species</b>	<b>Test Result</b>	<b>Exposure Duration</b>
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#### Target Organ(s)

#### Specific Target Organ Toxicity - single exposure

<b>Name</b>	<b>Route</b>	<b>Target Organ(s)</b>	<b>Value</b>	<b>Species</b>	<b>Test Result</b>	<b>Exposure Duration</b>
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#### Specific Target Organ Toxicity - repeated exposure

<b>Name</b>	<b>Route</b>	<b>Target Organ(s)</b>	<b>Value</b>	<b>Species</b>	<b>Test Result</b>	<b>Exposure</b>
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						<b>Duration</b>
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**Aspiration Hazard**

<b>Name</b>	<b>Value</b>
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Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

**SECTION 12: Ecological information****Ecotoxicological information**

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

**Chemical fate information**

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

**SECTION 13: Disposal considerations****13.1. Disposal methods**

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Incinerate in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. As a disposal alternative, utilize an acceptable permitted waste disposal facility.

**EPA Hazardous Waste Number (RCRA):** Not regulated

**SECTION 14: Transport Information**

Not regulated per U.S. DOT, IATA or IMO.

*These transportation classifications are provided as a customer service. As the shipper YOU remain responsible for complying with all applicable laws and regulations, including proper transportation classification and packaging. 3M transportation classifications are based on product formulation, packaging, 3M policies and 3M understanding of applicable current regulations. 3M does not guarantee the accuracy of this classification information. This information applies only to transportation classification and not the packaging, labeling, or marking requirements. The original 3M package is certified for U.S. ground shipment only. If you are shipping by air or ocean, the package may not meet applicable regulatory requirements.*

**SECTION 15: Regulatory information****15.1. US Federal Regulations**

Contact 3M for more information.

**311/312 Hazard Categories:**

Fire Hazard - No   Pressure Hazard - No   Reactivity Hazard - No   Immediate Hazard - Yes   Delayed Hazard - No

**Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):**

<u><b>Ingredient</b></u>	<u><b>C.A.S. No</b></u>	<u><b>% by Wt</b></u>
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nickel zinc ferrate (NICKEL COMPOUNDS)	12645-50-0	57 - 77
nickel zinc ferrate (ZINC COMPOUNDS)	12645-50-0	57 - 77

## 15.2. State Regulations

Contact 3M for more information.

## 15.3. Chemical Inventories

This product is an article as defined by TSCA regulations, and is exempt from TSCA Inventory listing requirements.

Contact 3M for more information.

## 15.4. International Regulations

Contact 3M for more information.

**This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.**

## SECTION 16: Other information

### NFPA Hazard Classification

**Health:** 2 **Flammability:** 1 **Instability:** 0 **Special Hazards:** None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

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