

**Safety Data Sheet**  
acc. to OSHA HCS

Printing Date 12/27/2013

Revision Number 1

Revision Date 12/27/2013

**1 Identification**

- **Product identifier**
- **Trade name:** FA4844N
- **Article number:** 14158
- **Relevant identified uses of the substance or mixture.** Adhesive
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Royal Adhesives & Sealants, LLC  
Aerospace & Marine Inflatable Adhesives & Coatings Division  
48 Burgess Place  
Wayne, NJ 07470  
Information Phone Number: 973-694-0845  
Emergency Phone Number: 973-694-0845
- **Information department:** Environment protection department.
- **Emergency telephone number:** ChemTrec: UNITED STATES 1(800)424-9300 INTERNATIONAL 703-527-3887

**2 Hazard(s) identification**

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.



GHS08 Health hazard

Repr. 2 H361 Suspected of damaging fertility or the unborn child.

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

STOT SE 3 H336 May cause drowsiness or dizziness.

Eye Irrit. 2B H320 Causes eye irritation.

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

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### · Hazard pictograms



GHS02 GHS07 GHS08

### · Signal word Danger

### · Hazard statements

Highly flammable liquid and vapor.

Causes skin irritation.

Causes eye irritation.

Suspected of damaging fertility or the unborn child.

May cause drowsiness or dizziness.

May cause damage to organs through prolonged or repeated exposure.

May be fatal if swallowed and enters airways.

### · Precautionary statements

If medical advice is needed, have product container or label at hand.

Keep out of reach of children.

Read label before use.

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Store locked up.

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

### · Classification system:

### · NFPA ratings (scale 0 - 4)



Health = 2

Fire = 3

Reactivity = 0

### · HMIS-ratings (scale 0 - 4)

HEALTH	*2
FIRE	3
PHYSICAL HAZARD	0

Health = \*2

Fire = 3

Physical Hazard = 0

### · Other hazards

### · Results of PBT and vPvB assessment

· PBT: Not applicable.

· vPvB: Not applicable.

## \* 3 Composition/information on ingredients

### · Chemical characterization: Mixtures

· Description: Adhesive

### · Dangerous components:

and Non-Dangerous Components:

108-88-3	toluene	25-50%
110-54-3	n-hexane	5-20%

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110-82-7	cyclohexane	≤2.5%
	TSRN1397250002-5294P	na%
	TSRN1397250002-5594P	na%
	TSRN1397250002-5062P	na%

## 4 First-aid measures

- **Description of first aid measures**
- **After inhalation:**  
Supply fresh air or oxygen; call for doctor.  
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:**  
Wipe excess from skin.  
Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**  
Rinse opened eye for 20 minutes under running water. If eye becomes irritated, obtain medical treatment.
- **After swallowing:**  
Rinse out mouth with water. Drink 1 - 2 glasses of water but **DO NOT** induce vomiting. Do not give liquids to a drowsy, convulsing or unconscious person. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.  
Call a doctor immediately.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

## 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, sand, extinguishing powder. Do not use water.  
Use fire fighting measures that suit the environment.
- **For safety reasons unsuitable extinguishing agents:** Water
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Protective clothing and respiratory protective device.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Ensure adequate ventilation  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose of contaminated material as waste in accordance with federal state and local regulations.  
Ensure adequate ventilation.
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.

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See Section 13 for disposal information.

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling**  
 Avoid prolonged or repeated contact with skin.  
 Avoid contact with eyes.  
 Wash thoroughly after handling.  
 Open containers in a well ventilated area and avoid breathing headspace vapors.  
 Prevent formation of aerosols.
- **Information about protection against explosions and fires:**  
 Keep container closed when not in use.  
 Keep ignition sources away - Do not smoke.  
 Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location away from direct heat.
- **Information about storage in one common storage facility:** Store away from oxidizing agents.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**

### Components with limit values that require monitoring at the workplace:

#### 108-88-3 toluene (25-50%)

PEL Short-term value: C 300; 500\* ppm  
 Long-term value: 200 ppm  
 \*10-min peak per 8-hr shift

REL Short-term value: 560 mg/m<sup>3</sup>, 150 ppm  
 Long-term value: 375 mg/m<sup>3</sup>, 100 ppm

TLV Long-term value: 75 mg/m<sup>3</sup>, 20 ppm  
 BEI

#### 110-54-3 n-hexane (5-20%)

PEL Long-term value: 1800 mg/m<sup>3</sup>, 500 ppm

REL Long-term value: 180 mg/m<sup>3</sup>, 50 ppm

TLV Long-term value: 176 mg/m<sup>3</sup>, 50 ppm  
 Skin; BEI

#### 110-82-7 cyclohexane (≤2.5%)

PEL Long-term value: 1050 mg/m<sup>3</sup>, 300 ppm

REL Long-term value: 1050 mg/m<sup>3</sup>, 300 ppm

TLV Long-term value: 344 mg/m<sup>3</sup>, 100 ppm

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· **Ingredients with biological limit values:**

**108-88-3 toluene (25-50%)**

BEI	0.02 mg/L Medium: blood Time: prior to last shift of workweek Parameter: Toluene
	0.03 mg/L Medium: urine Time: end of shift Parameter: Toluene
	0.3 mg/g creatinine Medium: urine Time: end of shift Parameter: o-Cresol with hydrolysis (background)

**110-54-3 n-hexane (5-20%)**

BEI	0.4 mg/L Medium: urine Time: end of shift at end of workweek Parameter: 2.5-Hexanedione without hydrolysis
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· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**

· **Personal protective equipment (see listings below)**

· **General protective and hygienic measures:**

- Keep away from foodstuffs, beverages and feed.
- Immediately remove all soiled and contaminated clothing.
- Wash hands before breaks and at the end of work.
- Store protective clothing separately.
- Avoid contact with the skin.
- Avoid contact with the eyes and skin.

· **Breathing equipment:**

Use approved respiratory protection equipment when airborne exposure is excessive. Consult the respirator manufacturer to determine the appropriate type of equipment for a given application. Observe respirator use limitations specified by the manufacturer.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

· **Material of gloves**

Nitrile rubber, NBR  
Chloroprene rubber, CR

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

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- **Eye protection:**  
Safety glasses with side shields.



Tightly sealed goggles

- **Body protection:** Protective work clothing

## 9 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

<b>Form:</b>	Liquid
<b>Color:</b>	Not determined.
<b>Odor:</b>	Characteristic
<b>Odour threshold:</b>	Not determined.

- **pH-value:** Not determined.

- **Change in condition**

<b>Melting point:</b>	Undetermined.
<b>Boiling point:</b>	69 °C (156 °F)

- **Flash point:** -26 °C (-15 °F)

- **Flammability (solid, gaseous):** Not applicable.

- **Ignition temperature:** 240 °C (464 °F)

- **Decomposition temperature:** Not determined.

- **Auto igniting:** Product is not selfigniting.

- **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

- **Flammable limits:**

<b>Lower:</b>	1.2 Vol %
<b>Upper:</b>	7.4 Vol %

- **Vapor pressure at 20 °C (68 °F):** 160 hPa (120 mm Hg)

- **Specific gravity at 20 °C (68 °F):** 0.859 g/cm<sup>3</sup> (7.168 lbs/gal)

- **Relative density** Not determined.

- **Vapour density** Not determined.

- **Evaporation rate** Not determined.

- **Solubility in / Miscibility with**

- **Water:** Not miscible or difficult to mix.

- **Partition coefficient (n-octanol/water):** Not determined.

- **Viscosity:**

<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.

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- **Solvent content:**  
**VOC (Per EPA 24)** not available GMS/L
- **Other information** Pounds Per Gallon 7.17  
Lbs VOC/Gallon [less water. less exempts] 5.50  
Grams VOC/Liter [less water. less exempts] 658.70

## \* 10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** not reactive, as supplied.
- **Conditions to avoid** Heat, flames, sparks.
- **Incompatible materials:**  
 Reacts with oxidizing agents.  
 Reacts with acids.
- **Hazardous decomposition products:**  
 Carbon monoxide and carbon dioxide  
 Hydrogen chloride (HCl)  
 Hydrocarbons

## \* 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:**

### 108-88-3 toluene

Oral	LD50	5000 mg/kg (rat)
Dermal	LD50	12124 mg/kg (rabbit)
Inhalative	LC50/4 h	5320 mg/l (mouse)

### 110-82-7 cyclohexane

Oral	LD50	12705 mg/kg (rat)
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- **Primary irritant effect:**
- **on the skin:**  
 Skin irritant.  
 Irritant to skin and mucous membranes.
- **on the eye:**  
 Irritating effect.  
 Vapors may be irritating to the eyes.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
 The product shows the following dangers according to internally approved calculation methods for preparations:  
 Irritant  
 Carcinogenic.  
 The product can cause inheritable damage.

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· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

108-88-3	toluene	3
	TSRN1397250002-5294P	3

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

## \* 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:** Toxic for fish
- **Additional ecological information:**
- **General notes:** At present there are no ecotoxicological assessments.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

## \* 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:** Must be specially treated adhering to official regulations.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

## \* 14 Transport information

· <b>UN-Number</b>	
· <b>DOT, ADR, IMDG, IATA</b>	UN1133
· <b>UN proper shipping name</b>	
· <b>DOT</b>	Adhesives
· <b>ADR</b>	1133 Adhesives, ENVIRONMENTALLY HAZARDOUS
· <b>IMDG</b>	ADHESIVES (HEXANES, CYCLOHEXANE), MARINE POLLUTANT
· <b>IATA</b>	ADHESIVES

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· **Transport hazard class(es)**· **DOT**

· **Class** 3 Flammable liquids.  
 · **Label** 3

· **ADR, IMDG**

· **Class** 3 Flammable liquids  
 · **Label** 3

· **IATA**

· **Class** 3 Flammable liquids.  
 · **Label** 3

· **Packing group**· **DOT, ADR, IMDG, IATA** II

· **Environmental hazards:** Product contains environmentally hazardous substances:  
 cyclohexane

· **Marine pollutant:** Yes  
 Symbol (fish and tree)

· **Special marking (ADR):** Symbol (fish and tree)

· **Special precautions for user** Warning: Flammable liquids

· **Danger code (Kemler):** 33

· **EMS Number:** F-E,S-D

· **Transport in bulk according to Annex II of  
 MARPOL73/78 and the IBC Code** Not applicable.

· **Transport/Additional information:**· **DOT**

· **Remarks:** Special marking with the symbol (fish and tree).

· **UN "Model Regulation":** UN1133, Adhesives, ENVIRONMENTALLY HAZARDOUS, 3, II

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## 15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**

· **Sara**

· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

108-88-3	toluene
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110-54-3	n-hexane
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110-82-7	cyclohexane
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· **TSCA (Toxic Substances Control Act):**

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements.

· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity:**

108-88-3	toluene
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· **(DSL) Canada Domestic Substance List**

All components of this product are on the DSL (Canada Domestic Substance list) or are exempt from DSL requirements.

· **Carcinogenity categories**

· **EPA (Environmental Protection Agency)**

108-88-3	toluene	II
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110-54-3	n-hexane	II
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110-82-7	cyclohexane	I
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· **TLV (Threshold Limit Value established by ACGIH)**

108-88-3	toluene	A4
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· **MAK (German Maximum Workplace Concentration)**

None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

· **National regulations:**

· **Information about limitation of use:**

Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.

· **Water hazard class:** Water hazard class 3 (Self-assessment): extremely hazardous for water.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

Although the information and recommendations set forth in this MSDS are presented in good faith and are believed to be correct as of the date of this MSDS, Royal Adhesives & Sealants makes no representations as to the completeness or accuracy thereof. Information is supplied on the condition that the persons receiving and using it will make their own determination as to the suitability for their purpose prior to use. In no event will Royal

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*Adhesives & Sealants or any affiliate thereof be responsible for damages of any nature whatsoever resulting from the use or reliance on the information set forth in the MSDS.*

· **Department issuing MSDS:** Environment protection department.

· **Creation Date:** 12/27/2013

· **Abbreviations and acronyms:**

*ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)*

*IMDG: International Maritime Code for Dangerous Goods*

*DOT: US Department of Transportation*

*IATA: International Air Transport Association*

*ACGIH: American Conference of Governmental Industrial Hygienists*

*EINECS: European Inventory of Existing Commercial Chemical Substances*

*ELINCS: European List of Notified Chemical Substances*

*CAS: Chemical Abstracts Service (division of the American Chemical Society)*

*NFPA: National Fire Protection Association (USA)*

*HMIS: Hazardous Materials Identification System (USA)*

*LC50: Lethal concentration, 50 percent*

*LD50: Lethal dose, 50 percent*

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