

Safety Data Sheet

BOSS™ Diesel Fuel Additive

1. Product and company identification

Product name	BOSS™ Diesel Fuel Additive
Material uses	Petrochemical industry: Fuel additive.
Internal code	FS-000314
System code	IFS0879
Date of issue/Date of revision	2019-06-19
Date of previous issue	2019-06-19
Version	3.01
Supplier	Innospec Fuel Specialties LLC 8310 South Valley Highway Suite 350 Englewood CO, 80112 USA
Information contact	1-800-441-9547
e-mail address of person responsible for this SDS	sdsinfo@innospecinc.com
NON-emergency enquiries	corporatecommunications@innospecinc.com
Emergency telephone number	

In USA, Canada and North America, 24 hour/ 7 day emergency information for our product is provided by the CHEMTREC® Emergency Call Center based in the USA

Country information	Emergency telephone number
USA, Canada, Puerto Rico, Virgin Islands	+1 800 424 9300
In case of difficulties, or for ships at sea	+1 703 527 3887

In Europe, Middle East, Africa, Asia Pacific and South America 24 hour/ 7 day emergency response for our products is provided by the NCEC CARECHEM 24 global network




The main regional centres are listed here in Section 1.

Other local contact numbers for specific language support in Asia Pacific are listed in Section 16

Country information	Emergency telephone number	Location
South America (all countries)	+1 215 207 0061	Philadelphia USA
Brazil	+5511 3197 5891	Brazil
Mexico	+52 555 004 8763	Mexico
Europe (all countries) Middle East, Africa (French, Portuguese, English)	+44 (0) 1235 239 670	London, UK
Middle East, Africa (Arabic, French, English)	+44 (0) 1235 239 671	Lebanon
Asia Pacific (all countries except China)	+65 3158 1074	Singapore
China	+86 10 5100 3039	Beijing China

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I Section 2. Hazards identification

OSHA/HCS status	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	<p>FLAMMABLE LIQUIDS - Category 3</p> <p>SKIN IRRITATION - Category 2</p> <p>EYE IRRITATION - Category 2A</p> <p>CARCINOGENICITY - Category 2</p> <p>ASPIRATION HAZARD - Category 1</p>
<u>GHS label elements</u>	
Hazard pictograms	
Signal word	Danger
Hazard statements	<p>H226 - Flammable liquid and vapor.</p> <p>H319 - Causes serious eye irritation.</p> <p>H315 - Causes skin irritation.</p> <p>H351 - Suspected of causing cancer.</p> <p>H304 - May be fatal if swallowed and enters airways.</p>
<u>Precautionary statements</u>	
Prevention	<p>P201 - Obtain special instructions before use.</p> <p>P202 - Do not handle until all safety precautions have been read and understood.</p> <p>P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing.</p> <p>P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.</p> <p>P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment.</p> <p>P242 - Use only non-sparking tools.</p> <p>P243 - Take precautionary measures against static discharge.</p> <p>P233 - Keep container tightly closed.</p> <p>P264 - Wash hands thoroughly after handling.</p>
Response	<p>P308 + P313 - IF exposed or concerned: Get medical attention.</p> <p>P301 + P310 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.</p> <p>P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.</p> <p>P302 + P352 + P362+P364 - IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse.</p> <p>P332 + P313 - If skin irritation occurs: Get medical attention.</p> <p>P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P337 + P313 - If eye irritation persists: Get medical attention.</p>
Storage	<p>P405 - Store locked up.</p> <p>P403 - Store in a well-ventilated place.</p> <p>P235 - Keep cool.</p>
Disposal	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazards not otherwise classified	None known.

Section 2. Hazards identification

Target organs

Contains material which causes damage to the following organs: blood, kidneys, liver, lymphatic system, gastrointestinal tract, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea.

Contains material which may cause damage to the following organs: lungs, the nervous system, cardiovascular system.

See toxicological information (Section 11)

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	%	CAS number
Solvent naphtha (petroleum), light arom.	30-60	64742-95-6
1,2,4-trimethylbenzene	15 - 30	95-63-6
Solvent naphtha (petroleum), heavy arom.	9.99 - 14.99	1189173-42-9 [64742-94-5]
2-ethylhexyl nitrate	9.99 - 14.99	27247-96-7
2-butoxyethanol; butyl cellosolve	0.99 - 4.99	111-76-2
cumene	0.99 - 4.99	98-82-8
Xylene	0.99 - 4.99	1330-20-7
naphthalene	0.09 - 0.99	91-20-3

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

Additional information

Contains <15% 2-ethylhexyl nitrate [CAS 27247-96-7]

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Section 4. First aid measures

Ingestion

Get medical attention immediately. Call a poison center or physician. Remove dentures if any. Wash out mouth with water. Stop if the exposed person feels sick as vomiting may be dangerous. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact

Causes serious eye irritation.

Inhalation

No known significant effects or critical hazards.

Skin contact

Causes skin irritation.

Ingestion

May be fatal if swallowed and enters airways.

Over-exposure signs/symptoms

Eye contact

Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation

No specific data.

Skin contact

Adverse symptoms may include the following:
irritation
redness

Ingestion

Adverse symptoms may include the following:
nausea or vomiting

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician

In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments

No specific treatment.

Protection of first-aiders

No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Use dry chemical, CO₂, water spray (fog) or foam.

Unsuitable extinguishing media

Do not use water jet.

Specific hazards arising from the chemical

Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products

Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides

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Section 5. Fire-fighting measures

Special protective actions for fire-fighters

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. Fight fire from protected location or maximum possible distance. Cool containing vessels with flooding quantities of water until well after fire is out.

Special protective equipment for fire-fighters

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Flash point

Closed cup: 51.7°C (125.1°F) [Pensky-Martens.]

I Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders

If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up

Small spill

Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill

Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

I Section 7. Handling and storage

Precautions for safe handling

Protective measures

Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not swallow. Avoid breathing vapor or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or

Section 7. Handling and storage

any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a segregated and approved area. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Storage Temperature : Ambient.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
1,2,4-trimethylbenzene	<p>ACGIH TLV (United States, 3/2018). TWA: 25 ppm, 0 times per shift, 8 hours. TWA: 123 mg/m³, 0 times per shift, 8 hours.</p> <p>OSHA PEL 1989 (United States, 3/1989). TWA: 25 ppm, 0 times per shift, 8 hours. TWA: 125 mg/m³, 0 times per shift, 8 hours.</p> <p>NIOSH REL (United States, 10/2016). TWA: 25 ppm, 0 times per shift, 10 hours. TWA: 125 mg/m³, 0 times per shift, 10 hours.</p>
2-ethylhexyl nitrate	<p>Innospec Inc. (United States, 1/2013). Absorbed through skin. TWA: 1 ppm 8 hours. STEL: 1 ppm 15 minutes.</p>
2-butoxyethanol; 1 butyl cellosolve	<p>OSHA PEL 1989 (United States, 3/1989). Absorbed through skin.</p> <p>TWA: 25 ppm, 0 times per shift, 8 hours. TWA: 120 mg/m³, 0 times per shift, 8 hours.</p> <p>NIOSH REL (United States, 10/2016). Absorbed through skin. TWA: 5 ppm, 0 times per shift, 10 hours. TWA: 24 mg/m³, 0 times per shift, 10 hours.</p> <p>ACGIH TLV (United States, 3/2018). TWA: 20 ppm, 0 times per shift, 8 hours.</p> <p>OSHA PEL (United States, 5/2018). Absorbed through skin. TWA: 50 ppm, 0 times per shift, 8 hours. TWA: 240 mg/m³, 0 times per shift, 8 hours.</p>
cumene	<p>OSHA PEL 1989 (United States, 3/1989). Absorbed through skin.</p> <p>TWA: 50 ppm, 0 times per shift, 8 hours. TWA: 245 mg/m³, 0 times per shift, 8 hours.</p>

Section 8. Exposure controls/personal protection

Xylene	<p>NIOSH REL (United States, 10/2016). Absorbed through skin. TWA: 50 ppm, 0 times per shift, 10 hours. TWA: 245 mg/m³, 0 times per shift, 10 hours.</p> <p>ACGIH TLV (United States, 3/2018). TWA: 50 ppm, 0 times per shift, 8 hours.</p> <p>OSHA PEL (United States, 5/2018). Absorbed through skin. TWA: 50 ppm, 0 times per shift, 8 hours. TWA: 245 mg/m³, 0 times per shift, 8 hours.</p> <p>ACGIH TLV (United States, 3/2018). TWA: 100 ppm, 0 times per shift, 8 hours. TWA: 434 mg/m³, 0 times per shift, 8 hours. STEL: 150 ppm, 0 times per shift, 15 minutes. STEL: 651 mg/m³, 0 times per shift, 15 minutes.</p> <p>OSHA PEL 1989 (United States, 3/1989). TWA: 100 ppm, 0 times per shift, 8 hours. TWA: 435 mg/m³, 0 times per shift, 8 hours. STEL: 150 ppm, 0 times per shift, 15 minutes. STEL: 655 mg/m³, 0 times per shift, 15 minutes.</p> <p>OSHA PEL (United States, 5/2018). TWA: 100 ppm, 0 times per shift, 8 hours. TWA: 435 mg/m³, 0 times per shift, 8 hours.</p>
naphthalene	<p>ACGIH TLV (United States, 3/2018). Absorbed through skin. TWA: 10 ppm, 0 times per shift, 8 hours. TWA: 52 mg/m³, 0 times per shift, 8 hours.</p> <p>OSHA PEL 1989 (United States, 3/1989). TWA: 10 ppm, 0 times per shift, 8 hours. TWA: 50 mg/m³, 0 times per shift, 8 hours. STEL: 15 ppm, 0 times per shift, 15 minutes. STEL: 75 mg/m³, 0 times per shift, 15 minutes.</p> <p>NIOSH REL (United States, 10/2016). TWA: 10 ppm, 0 times per shift, 10 hours. TWA: 50 mg/m³, 0 times per shift, 10 hours. STEL: 15 ppm, 0 times per shift, 15 minutes. STEL: 75 mg/m³, 0 times per shift, 15 minutes.</p> <p>OSHA PEL (United States, 5/2018). TWA: 10 ppm, 0 times per shift, 8 hours. TWA: 50 mg/m³, 0 times per shift, 8 hours.</p>

Appropriate engineering controls

Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Section 8. Exposure controls/personal protection

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state

Liquid.

Color

Clear. Yellow . Amber.

Odor

Pungent.

Odor threshold

Not available.

pH

Not available.

Melting point/freezing point

Not available.

Boiling point

Lowest known value: 138.85°C (281.9°F) (xylene). Weighted average: 171.09°C (340°F)

Flash point

Closed cup: 51.7°C (125.1°F) [Pensky-Ma rtens.]

Evaporation rate

Highest known value: <1 (2-ethylhexyl nitrate) Weighted average: 0.35 compared with butyl acetate

Flammability (solid, gas)

Not available.

Lower and upper explosive (flammable) limits

Greatest known range: Lower: 1.1% Upper: 10.6% (2-butoxyethanol)

Vapor pressure

Highest known value: 0.7 to 0.9 kPa (5 to 6.6 mm Hg) (at 20°C) (xylene). Weighted average: 0.21 kPa (1.58 mm Hg) (at 20°C)

Vapor density

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Section 9. Physical and chemical properties

	Highest known value: 4.6 to 5.5 (Air= 1) (Solvent naphtha (petroleum), heavy arom.). Weighted average: 4 (Air= 1)
Density	0.901 g/cm ³ [15°C (59°F)]
Specific gravity	0.902 [ASTM D 4052]
Density	7.52 lbs/gal
Solubility	Insoluble in the following materials: cold water, hot water, methanol, diethyl ether.
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	Lowest known value: 176°C (348.8°F) (2-ethylhexyl nitrate).
Decomposition temperature	Not available.
Viscosity	Kinematic (40°C (104°F)): <0.205 cm ² /s (<20.5 cSt)

Section 10. Stability and reactivity

Reactivity	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	This mixture contains materials which are unstable under the following conditions: heat Incompatible with fluorine.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
Incompatible materials	Reactive or incompatible with the following materials: oxidizing materials
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Test	Species	Result	Dose
Solvent naphtha (petroleum), light arom.	-	Rat	LD50 Oral	8400 mg/kg -
Solvent naphtha (petroleum), heavy arom.	-	Rat	LC50 Inhalation Vapor	>590 mg/ 4 hours m3
		Rabbit	LD50 Dermal	>2 ml/kg
		Rabbit	LD50 Dermal	2000 mg/kg -
		Rat	LDLo Oral	5 ml/kg
2-ethylhexyl nitrate		Rat	LCLo Inhalation Vapor	>4.6 mg/l 1 hours
		Rabbit	LD50 Dermal	>4820 mg/ - kg
		Rat	LD50 Oral	>9640 mg/ - kg
2-butoxyethano;l butyl cellosolve cumene		Rat	LD50 Oral	250 mg/kg -
		Rat	LC50 Inhalation Vapor	39000 mg/ 4 hours m3
		Rat	LD50 Oral	1400 mg/kg -
Xylene		Rabbit	LD50 Dermal	4320 mg/kg -

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naphthalene		Rat	LD50 Oral	4300 mg/kg -
		Rat	LC50 Inhalation Vapor	>340 mg/ 1 hours m3
		Rabbit	LD50 Dermal	>2000 mg/ - kg
		Rat	LD50 Oral	490 mg/kg -

Potential chronic health effects

Not available.

Irritation/Corrosion

Product/ingredient name	Test	Species	Result
Solvent naphtha (petroleum) , light arom.	-	Rabbit	Eyes - Mild irritant
Solvent naphtha (petroleum), heavy arom.	-	Rabbit	Skin - Mild irritant
2-ethylhexyl nitrate	OECD 437 Bovine Corneal Opacity and Permeability Test	Mammal-species unspecified	Eyes - Mild irritant
		Mammal-species unspecified	Eyes - Mild irritant
2-butoxyethanol; butyl cellosolve	OECD 405 Acute Eye Irritation/Corrosion	Rabbit	Eyes - Mild irritant
		Rabbit	Eyes - Moderate irritant -
cumene		Rabbit	Eyes - Severe irritant
		Rabbit	Skin - Mild irritant
		Rabbit	Eyes - Mild irritant
Xylene		Rabbit	Eyes - Mild irritant
		Rabbit	Skin - Mild irritant
		Rabbit	Skin - Moderate irritant -
		Rabbit	Eyes - Severe irritant
		Rat	Skin - Mild irritant
		Rabbit	Skin - Moderate irritant -

Sensitization

Product/ingredient name	Test	Species	Result
2-ethylhexyl nitrate	OECD 406 Skin Sensitization	Guinea pig	Not sensitizing -

Mutagenicity

Product/ingredient name	Test	Experiment	Result
2-ethylhexyl nitrate	OECD 473 <i>In vitro</i> Mammalian Chromosomal Aberration Test	Experiment: <i>In vitro</i> Subject: Mammalian-Human	Negative

Carcinogenicity**Classification**

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Product/ingredient name	OSHA	IARC	NTP
2-butoxyethano;l butyl cellosolve		3	
cumene		2B	Reasonably anticipated to be a human carcinogen.
Xylene		3	
naphthalene		2B	Reasonably anticipated to be a human carcinogen.

Reproductive toxicity

Product/ingredient name	Test	Species	Result	Dose
2-ethylhexyl nitrate	OECD 421 Reproduction/ Developmental Toxicity Screening Test	Rat- Male, Female		Oral: 20 mg/kg Parental toxicity.
	OECD 421 Reproduction/ Developmental Toxicity Screening Test	Rat- Male, Female		Oral: 100 mg/kg F1

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
1,2,4-trimethylbenzene	Category 3	Not applicable.	Respiratory tract irritation
Solvent naphtha (petroleum), heavy arom.	Category 3	Not applicable.	Narcotic effects
cumene	Category 3	Not applicable.	Narcotic effects

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Name	Result
Solvent naphtha (petroleum), light arom.	ASPIRATION HAZARD - Category 1
Solvent naphtha (petroleum), heavy arom.	ASPIRATION HAZARD - Category 1
cumene	ASPIRATION HAZARD - Category 1
Xylene	ASPIRATION HAZARD - Category 1

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
1,2,4-trimethylbenzene	Acute LC50 7.72 mg/l	Fish	96 hours
Solvent naphtha (petroleum), heavy arom.	Acute EC50 1 to 3 mg/l	Algae	72 hours
2-ethylhexyl nitrate	Acute EC50 3 to 10 mg/l	Daphnia	48 hours
	Acute LC50 2 to 5 mg/l	Fish	96 hours
	Acute EC50 1 to 10 mg/l Estimated. Nominal Concentration	Algae	72 hours
2-butoxyethanol; butyl	Acute EC50 >10 mg/l Estimated.	Daphnia	48 hours
	Acute LC50 2 mg/l	Fish - Danio rerio	96 hours
	Acute EC50 >1000 mg/l Fresh water	Daphnia - Daphnia magna	48 hours

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cellosolve	Acute LC50 1490 mg/l Chronic NOEC 1000 mg/l Fresh water	Fish Daphnia - Daphnia magna	96 hours 48 hours
cumene	Acute EC50 2600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 10.6 mg/l	Daphnia	48 hours
	Acute LC50 2.7 mg/l	Fish	96 hours
Xylene	Acute LC50 3.3 mg/l	Fish	96 hours
naphthalene	Acute EC50 1.96 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 2350 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
	Acute LC50 1.6 mg/l	Fish	96 hours
	Chronic NOEC 0.5 mg/l Marine water	Crustaceans - Uca pugnax - Adult	3 weeks
	Chronic NOEC 1.5 mg/l Fresh water	Fish - Oreochromis mossambicus	60 days

Persistence and degradability

Product/ingredient name	Test	Result	
2-ethylhexyl nitrate	OECD 310 Ready Biodegradability- CO ₂ in Sealed Vessels (Headspace Test)	0 % - Not readily - 28 days	
Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Solvent naphtha (petroleum), heavy arom.	-		Inherent
2-ethylhexyl nitrate	Fresh water 10 to 15 days, pH 4, 25°C Fresh water 7 days, pH 7, 25°C Fresh water 4 to 6 days, pH 9, 25°C		Not readily
Xylene			Readily




Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
Solvent naphtha (petroleum), light arom.	-	10 to 2500	high
1,2,4-trimethylbenzene	4.09	275	low
Solvent naphtha (petroleum), heavy arom.	-	<100	low
2-ethylhexyl nitrate	5.24	1332	high
2-butoxyethanol; butyl cellosolve	0.83		low
cumene	3.66	94.69	low
Xylene	3.12 to 3.2	8.1 to 25.9	low
naphthalene	3.3	>100	low

I Section 13. Disposal considerations

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

I Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	NA1993	UN1993	UN1993
UN proper shipping name	Combustible liquid, n.o.s. (Solvent naphtha (petroleum), light arom., 1,2, 4-trimethylbenzene.) Marine pollutant (Solvent naphtha (petroleum), light arom., 1,2, 4-trimethylbenzene)	FLAMMABLE LIQUID, N.O.S. (Solvent naphtha (petroleum), light arom., 1,2, 4-trimethylbenzene). Marine pollutant (Solvent naphtha (petroleum), light arom., 1,2, 4-trimethylbenzene)	Flammable liquid, n.o.s. (Solvent naphtha (petroleum), light arom., 1,2, 4-trimethylbenzene)
Transport hazard class(es)	Combustible liquid. 	3 	3 
Packing group	III	III	III
Environmental hazards	Yes.	Yes.	Yes. The environmentally hazardous substance mark is not required.
Additional information	Non-bulk packages (less than or equal to 119 gal) of combustible liquids, that are marine pollutants, are not regulated as hazardous materials in package sizes less than the product reportable quantity, unless transported by vessel. This product is not regulated as a marine pollutant when transported on inland waterways in sizes of ≤5 L or ≤5 kg or by road, rail, or inland air in non-bulk sizes, provided the packagings meet the	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. Emergency schedules F-E, _S-E_ Special provisions 223, 274, 955	The environmentally hazardous substance mark may appear if required by other transportation regulations. Quantity limitation Passenger and Cargo Aircraft: 60 L. Packaging instructions: 355. Cargo Aircraft Only: 220 L. Packaging instructions: 366. Limited Quantities - Passenger Aircraft: 10 L. Packaging instructions: Y344. Special provisions A3

Section 14. Transport information

	<p>general provisions of §§ 173.24 and 173.24a.</p> <p>Reportable quantity 9566.9 lbs/ 4343.4 kg [1273.5 gal / 4820.6 L]. Package sizes shipped in quantities less than the product reportable quantity are not subject to the RO (reportable quantity) transportation requirements.</p> <p>Limited quantity Yes.</p> <p>Packaging instruction Exceptions: 150. Non-bulk: 203. Bulk: 241.</p> <p>Quantity limitation Passenger aircraft/rail: 60 L. Cargo aircraft: 220 L.</p> <p>Special provisions 1B3, T4, TP1</p>		
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Special precautions for user **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

U.S. Federal regulations **TSCA 5(a)2 final significant new use rules:** 4-nonylphenol, branched
United States inventory (TSCA Sb): All components are listed or exempted.
Clean Water Act (CWA) 307: naphthalene; toluene

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) Listed

SARA 302/304

Composition/information on ingredients

Name	%	EHS	SARA302TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
ethylenediamine; 1,2-diaminoethane	0 - 0.09	Yes.	10000	1337.1	5000	668.5
formaldehyde	0 - 0.09	Yes.	500	55	100	11

SARA 304 RQ 2061528.8 lbs/ 935934.1 kg [274414.7 gal/ 1038772.6 L]

SARA 311/312

Classification Fire hazard
Immediate (acute) health hazard
Delayed (chronic) health hazard

Composition/information on ingredients

Section 15. Regulatory information

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Solvent naphtha (petroleum), light arom.	30 - 60	Yes.	No.	No.	Yes.	No.
1,2,4-trimethylbenzene	15 - 30	Yes.	No.	No.	Yes.	No.
Solvent naphtha (petroleum), heavy arom.	9.99 - 14.99	Yes.	No.	No.	Yes.	No.
2-ethylhexyl nitrate	9.99 - 14.99	Yes.	No.	No.	Yes.	No.
2-butoxyethanol; butyl cellosolve	0.99 - 4.99	Yes.	No.	No.	Yes.	No.
cumene	0.99 - 4.99	Yes.	No.	No.	Yes.	Yes.
Xylene	0.99 - 4.99	Yes.	No.	No.	Yes.	No.
naphthalene	0.09 - 0.99	No.	No.	No.	Yes.	Yes.

SARA313

	Product name	CAS number	%
Form R - Reporting requirements	1,2,4-trimethylbenzene	95-63-6	15 - 30
	2-butoxyethanol	111-76-2	0.99 - 4.99
	cumene	98-82-8	0.99 - 4.99
	xylene	1330-20-7	0.99 - 4.99
	naphthalene	91-20-3	0.09 - 0.99
Supplier notification	1,2,4-trimethylbenzene	95-63-6	15 - 30
	2-butoxyethanol	111-76-2	0.99 - 4.99
	cumene	98-82-8	0.99 - 4.99
	xylene	1330-20-7	0.99 - 4.99
	naphthalene	91-20-3	0.09 - 0.99

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts

The following components are listed: PSEUDOCUMENE; CUMENE; 1-METHYLETHYLBENZENE; XYLENE; DIMETHYLBENZENE; BUTOXYETHANOL

New York

The following components are listed: Cumene; Benzene, 1-methylethyl-; Xylene mixed; Naphthalene

New Jersey

The following components are listed: PSEUDOCUMENE; 1,2,4-TRIMETHYL BENZENE; CUMENE; BENZENE, (1-METHYLETHYL)-; XYLENES; BENZENE, DIMETHYL-; NAPHTHALENE; MOTH FLAKES; 2-BUTOXY ETHANOL; BUTYL CELLOSOLVE

Pennsylvania

The following components are listed: PSEUDOCUMENE; BENZENE, (1-METHYLETHYL)-; BENZENE, DIMETHYL-; NAPHTHALENE; ETHANOL, 2-BUTOXY-

California Prop. 65

WARNING: This product can expose you to chemicals including cumene, naphthalene, formaldehyde, which are known to the State of California to cause cancer, and toluene, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Section 15. Regulatory information

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level	Contains % or ppm
cumene	Yes.	No.			0.99 - 4.99
naphthalene	Yes.	No.			0.09 - 0.99
toluene	No.	Yes.			<100ppm
Formaldehyde, solution	Yes.	No.			<10ppm

International lists

National inventory

Australia inventory (AICS)

Not determined.

Canada inventory

All components are listed or exempted.

China inventory (IECSC)

At least one component is not listed.

Europe inventory

Not determined.

Japan inventory (ENCS)

Japan inventory (ENCS): At least one component is not listed.

Japan inventory (ISHL): Not determined.

New Zealand Inventory of Chemicals (NZIoC)

At least one component is not listed.

Philippines inventory (PICCS)

At least one component is not listed.

Korea inventory (KECI)

At least one component is not listed.

Taiwan inventory (TCSI)

Not determined.

United States inventory (TSCA Sb)

All components are listed or exempted.

Our REACH (pre-) registrations DO NOT cover the following:

- The manufacture of these products by our company outside the EU unless covered by the Only Representative provisions, and
 - The importation of these products into Europe by other companies. Re-importation by other companies is not covered by our (pre-) registrations
- Customers and other third parties importing and/or re-importing our products into Europe will need either:
- Their own (pre-) registration for substances contained in the imported product, or constituent monomers (imported above 1 tonne per year and >2% by weight) in the case of imported polymers, or
 - In the case of importation only, to make use of the "Only Representative" provisions, if available.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	* 3
Flammability	2
Physical hazards	0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

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National Fire Protection Association (U.S.A.)



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Section 16. Other information

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

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Key to abbreviations

ATE= Acute Toxicity Estimate
 BCF = Bioconcentration Factor
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 IATA = International Air Transport Association
 IBC = Intermediate Bulk Container
 IMDG = International Maritime Dangerous Goods
 LogPow= logarithm of the octanol/water partition coefficient
 MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
 UN = United Nations

◆ Indicates information that has changed from previously issued version.

Notice to reader

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Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.