

**Section 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**

**Name:** Auto Diesel / DERV  
**Synonyms/Other Means of Identification:** G.O.R.V.  
Ultra-Low Sulphur Diesel, AD10  
**Safety Data Sheet Number:** **814648**  
**MARPOL Annex I Category:** Gas Oils, Including Ship's Bunkers  
**REACH Registration Number:** 01-2119484664-27-0004

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

**Intended Use:** Fuel  
**Uses Advised Against:** Uses other than those covered by the exposure scenarios appended to this Safety Data Sheet are not supported.

**1.3 Details of the supplier of the substance or mixture**

**Manufacturer:** ConocoPhillips Ltd, Humber Refinery  
South Killingholme, North Lincolnshire DN40 3DW  
**Customer Service:** +44 (0)1469 571571  
**SDS Information:** <http://www.conocophillips.com/EN/products/Pages/msds.aspx>  
Email: MSDS@conocophillips.com

**1.4 Emergency telephone number**

+44 (0)1469 571315 (24 Hours)

**Section 2: Hazards Identification****2.1 Classification of the substance or mixture****CLP Classification (EC No 1272/2008):**

H226 -- Flammable liquids -- Category 3  
H304 -- Aspiration Hazard -- Category 1  
H315 -- Skin corrosion/irritation -- Category 2  
H332 -- Acute toxicity, Inhalation -- Category 4  
H350 -- Carcinogenicity -- Category 1B  
H373 -- Specific target organ toxicity (repeated exposure) -- Category 2  
H411 -- Hazardous to the aquatic environment, chronic toxicity -- Category 2

**Superseded DSD Classification (67/548/EEC and 1999/45/EC):**

R10 , Xn;R20 , Xi;R38 , Carc. Cat. 1;R45 , Xn;R48/21 , Xn;R65 , N;R51/53

**2.2 Label Elements****DANGER**

**H226: Flammable liquid and vapor.**  
**H351: Suspected of causing cancer.**  
**H332: Harmful if inhaled.**  
**H304: May be fatal if swallowed and enters airways.**  
**H315: Causes skin irritation.**  
**H373: May cause damage to organs through prolonged or repeated exposure.**  
**H411: Toxic to aquatic life with long lasting effects.**

P201: Obtain special instructions before use.  
P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P260: Do not breathe dust/fume/gas/mist/vapours/spray.  
P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.  
P331: Do NOT induce vomiting.  
P501: Dispose of contents/container to approved disposal facility.

### 2.3 Other hazards

Does not meet the criteria for persistent, bioaccumulative and toxic (PBT) or very persistent, very bioaccumulative (vPvB) substances.

## Section 3: Composition / Information on Ingredients

### 3.2 Mixture

Component	CASRN	EINECS	REACH Registration No.	Concentration <sup>1</sup>	CLP Classification <sup>2</sup>	DSD Classification <sup>3</sup>
Diesel Oil ..C9-20	68334-30-5	269-822-7	01-2119484664-27	90-100	H351	Carc.Cat.3;R40
Fatty acids, tallow, Me esters	61788-61-2	262-989-7	Not Applicable	0-10		
Fatty acids, vegetable-oil, Me esters	68990-52-3	262-989-7	Not Applicable	0-10		
Naphthalene	91-20-3	202-049-5	Not Applicable	<1	H351 H302 H410	Carc.Cat.3;R40 Xn;R22 N;R50-53

<sup>1</sup> All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

<sup>2</sup> Regulation EC 1272/2008.

<sup>3</sup> Superseded Directives 67/548/EEC and 1999/45/EC.

Total Sulfur: < 0.1 wt%

## Section 4: First Aid Measures

### 4.1 Description of first aid measures

**Eye Contact:** If irritation or redness develops from exposure, flush eyes with clean water. If symptoms persist, seek medical attention.

**Skin Contact:** Remove contaminated shoes and clothing, and flush affected area(s) with large amounts of water. If skin surface is damaged, apply a clean dressing and seek medical attention. If skin surface is not damaged, cleanse affected area(s) thoroughly by washing with mild soap and water or a waterless hand cleaner. If irritation or redness develops, seek medical attention. Wash contaminated clothing before reuse. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician. (see Note to Physician)

**Inhalation (Breathing):** If respiratory symptoms or other symptoms of exposure develop, move victim away from source of exposure and into fresh air in a position comfortable for breathing. If symptoms persist, seek immediate medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

**Ingestion (Swallowing):** Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and vomiting, place on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek medical attention.

### 4.2 Most important symptoms and effects

**Acute:** Minor respiratory irritation at high vapor concentrations.

**Delayed:** Dry skin and possible irritation with repeated or prolonged exposure.

### 4.3 Indication of immediate medical attention and special treatment needed

**Notes to Physician:** When using high-pressure equipment, injection of product under the skin can occur. In this case, the casualty should be sent immediately to hospital. Do not wait for symptoms to develop. High-pressure hydrocarbon injection injuries may produce substantial necrosis of underlying tissue despite an innocuous appearing external wound. These injuries often require extensive emergency surgical debridement and all injuries should be evaluated by a specialist in order to assess the extent of injury. Early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

## Section 5: Fire-Fighting Measures

### 5.1 Extinguishing media

Dry chemical, carbon dioxide, or foam is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters.

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

**Unusual Fire & Explosion Hazards:** Flammable. This material can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe). Vapors may travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers. This product will float and can be reignited on surface water. Vapors are heavier than air and can accumulate in low areas. If container is not properly cooled, it can rupture in the heat of a fire.

**Hazardous Combustion Products:** Combustion may yield smoke, carbon monoxide, and other products of incomplete combustion. Oxides of nitrogen and sulfur may also be formed.

### 5.3 Special protective actions for firefighters

For fires beyond the initial stage, emergency responders in the immediate hazard area should wear protective clothing. When the potential chemical hazard is unknown, in enclosed or confined spaces, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done safely. Move undamaged containers from immediate hazard area if it can be done safely. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Avoid spreading burning liquid with water used for cooling purposes. Cool equipment exposed to fire with water, if it can be done safely.

See Section 9 for Flammable Properties including Flash Point and Flammable (Explosive) Limits

## Section 6: Accidental Release Measures

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

Flammable. Spillages of liquid product will create a fire hazard and may form an explosive atmosphere. Keep all sources of ignition and hot metal surfaces away from spill/release if safe to do so. The use of explosion-proof electrical equipment is recommended. Stay upwind and away from spill/release. Avoid direct contact with material. For large spillages, notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

### 6.2 Environmental precautions

Stop spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Use foam on spills to minimize vapors. Use water sparingly to minimize environmental contamination and reduce disposal requirements. If spill occurs on water notify appropriate authorities and advise shipping of any hazard.

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

Notify relevant authorities in accordance with all applicable regulations. Immediate cleanup of any spill is recommended. Dike far ahead of spill for later recovery or disposal. Absorb spill with inert material such as sand or vermiculite, and place in suitable container for disposal. If spilled on water remove with appropriate methods (e.g. skimming, booms or absorbents). In case of soil contamination, remove contaminated soil for remediation or disposal, in accordance with local regulations.

Recommended measures are based on the most likely spillage scenarios for this material; however local conditions and regulations may influence or limit the choice of appropriate actions to be taken.

## **Section 7: Handling and Storage**

### **7.1 Precautions for safe handling**

Keep away from ignition sources such as heat/sparks/open flame – No smoking. Take precautionary measures against static discharge. Nonsparking tools should be used. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/clothing and eye/face protection. Do not breathe vapors or mists. Use only outdoors or in well-ventilated area. Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment.

Flammable. May vaporize easily at ambient temperatures. The vapor is heavier than air and may create an explosive mixture of vapor and air. Beware of accumulation in confined spaces and low lying areas. Open container slowly to relieve any pressure. Electrostatic charge may accumulate and create a hazardous condition when handling or processing this material. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. The use of explosion-proof electrical equipment is recommended and may be required (see appropriate fire codes for specific bonding/grounding requirements). Do not enter confined spaces such as tanks or pits without following proper entry procedures. Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames.

For use as a motor fuel only. Do not use as a solvent due to its flammable and potentially toxic properties. Siphoning by mouth can result in lung aspiration which can be harmful or fatal.

The use of hydrocarbon fuel in an area without adequate ventilation may result in hazardous levels of incomplete combustion products (e.g. carbon monoxide, oxides of sulfur and nitrogen, benzene and other hydrocarbons) and/or dangerously low oxygen levels.

Diesel engine exhaust contains hazardous combustion products and has been classified as a probable cancer hazard in humans.

High pressure injection of hydrocarbon fuels, hydraulic oils or greases under the skin may have serious consequences even though no symptoms or injury may be apparent. This can happen accidentally when using high pressure equipment such as high pressure grease guns, fuel injection apparatus or from pinhole leaks in tubing of high pressure hydraulic oil equipment.

### **7.2 Conditions for safe storage, including any incompatibilities**

Keep container(s) tightly closed and properly labeled. Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Store only in approved containers. Post area "No Smoking or Open Flame." Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. Before working on or in tanks which contain or have contained this material, refer to appropriate guidance pertaining to cleaning, repairing, welding, or other contemplated operations. Outdoor or detached storage is preferred. Indoor storage should meet Country or Committee standards and appropriate fire codes.

### **7.3 Specific end use(s)**

Refer to supplemental exposure scenarios if attached.

## **Section 8: Exposure Controls / Personal Protection**

### **8.1 Control parameters**

Section 8: Exposure Controls / Personal Protection			
Occupational Exposure Limits			
Component	US-ACGIH	UK-EH40	Other
Diesel Oil ..C9-20	TWA: 100 mg/m <sup>3</sup> Skin	None	None
Fatty acids, tallow, Me esters	None	None	None
Fatty acids, vegetable-oil, Me esters	None	None	None
Naphthalene	STEL: 15 ppm TWA: 10 ppm Skin	None	TWA: 0.2 mg/m <sup>3</sup> (as total of 17 PNA's measured by NIOSH Method 5506) (ConocoPhillips Guidelines)

STEL = Short Term Exposure Limit (15 minutes); TWA = Time Weighted Average (8 hours); None = No Occupational Exposure Limit

Biological Limit Values			
Component	US-ACGIH	EU 98/24/EC	UK-EH40
Diesel Oil ..C9-20	None	None	None
Fatty acids, tallow, Me esters	None	None	None
Fatty acids, vegetable-oil, Me esters	None	None	None
Naphthalene	None	None	None

None = No Biological Limit Value

Relevant DNEL and PNEC: Pending

## 8.2 Exposure controls

**Engineering controls:** If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required.

**Eye/Face Protection:** The use of eye protection that meets or exceeds EN 166 is recommended to protect against potential eye contact, irritation, or injury. Depending on conditions of use, close fitting eye protection and a face shield may be necessary.

**Skin/Hand Protection:** The use of gloves impervious to the specific material handled is advised to prevent skin contact. Users should check with manufacturers to confirm the breakthrough performance of their products. Depending on exposure and use conditions, additional protection may be necessary to prevent skin contact including use of items such as chemical resistant boots, aprons, arm covers, hoods, coveralls, or encapsulated suits. Suggested protective materials: Nitrile

**Respiratory Protection:** Where there is potential for airborne exposure above the exposure limit an approved air purifying respirator equipped with Type A, organic gases and vapour filters (as specified by the manufacturer) may be used.

A respiratory protection program that follows recommendations for the selection, use, care and maintenance of respiratory protective devices in EN 529:2005 should be followed whenever workplace conditions warrant a respirator's use. Air purifying respirators provide limited protection and cannot be used in atmospheres that exceed the maximum use concentration (as directed by regulation or the manufacturer's instructions), in oxygen deficient (less than 19.5 percent oxygen) situations, or under conditions that are immediately dangerous to life and health.

**Other Protective Equipment:** Eye wash and quick-drench shower facilities should be available in the work area. Thoroughly clean shoes and wash contaminated clothing before reuse.

**Environmental Exposure Controls:** Refer to Sections 6, 7, 12 and 13.

**Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.**

## Section 9: Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

Data represent typical values and are not intended to be specifications. N/A = Not Applicable; N/D = Not Determined

Appearance:	Clear straw colored
Physical Form:	Liquid
Odour:	Diesel fuel
Odour Threshold:	N/D
pH:	N/A
Melting/Freezing Point:	N/D
Initial Boiling Point/Range:	165-375°C
Flash Point:	<55°C (Closed Cup)
Evaporation Rate (nBuAc=1):	N/D
Flammability (solid, gas):	Flammable
Upper Explosive Limits (vol % in air):	6.0
Lower Explosive Limits (vol % in air):	0.5
Vapour Pressure:	<0.3 kPa @20°C
Relative Vapour Density (air=1):	>1
Relative Density (water=1):	0.82-0.845 @ 15°C
Solubility (ies):	Solubility in water: Negligible @20°C
Partition Coefficient (n-octanol/water) (Kow):	N/D
Auto-ignition Temperature:	250-270°C
Decomposition Temperature:	N/D
Viscosity:	4.8 mm <sup>2</sup> /s @ 20°C; 2-4.5 mm <sup>2</sup> /s @ 40°C
Explosive Properties:	N/A
Oxidising Properties:	N/A

## 9.2 Other Information

Pour Point:	-24°C
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## Section 10: Stability and Reactivity

10.1 Reactivity	Not chemically reactive.
10.2 Chemical stability	Stable under normal ambient and anticipated conditions of use.
10.3 Possibility of hazardous reactions	Hazardous reactions not anticipated.
10.4 Conditions to avoid	Avoid high temperatures and all sources of ignition. Prevent vapor accumulation.
10.5 Incompatible materials	Avoid contact with strong oxidizing agents and strong reducing agents.
10.6 Hazardous decomposition products	Not anticipated under normal conditions of use.

## Section 11: Toxicological Information

### 11.1 Information on Toxicological Effects of Substance/Mixture

Substance / Mixture	Hazard	Additional Information	LC50/LD50 Data
Acute Toxicity			
Inhalation	Harmful if inhaled		> 4.65 mg/L (mist)
Skin Absorption	Unlikely to be harmful		> 4.1 g/kg
Ingestion (Swallowing)	Unlikely to be harmful		> 5 g/kg

**Aspiration Hazard:** May be fatal if swallowed and enters airways.

**Skin Corrosion/Irritation:** Causes skin irritation. Repeated exposure may cause skin dryness or cracking.

**Serious Eye Damage/Irritation:** Causes mild eye irritation.

**Signs and Symptoms:** While significant vapor concentrations are not likely, high concentrations can cause minor respiratory irritation, headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue. Ingestion can cause irritation of the digestive tract, nausea, diarrhea, and vomiting.

**Skin Sensitization:** No information available. Not expected to be a skin sensitizer.

**Respiratory Sensitization:** No information available.

**Specific Target Organ Toxicity (Single Exposure):** Not expected to cause organ effects from single exposure.

**Specific Target Organ Toxicity (Repeated Exposure):** May cause damage to organs through prolonged or repeated exposure. Dermal application of a distillate fuel component at doses > 125 mg/kg, 5 d/wk, for 13 weeks resulted in decreased liver, thymus, and spleen weights, and altered bone marrow function. Microscopic alterations included liver hypertrophy and necrosis, decreased hematopoiesis and lymphocyte depletion.

**Carcinogenicity:** May cause cancer. Petroleum middle distillates have been shown to cause skin tumors in mice following repeated and prolonged skin contact. Follow-up studies have shown that these tumors are produced through a non-genotoxic mechanism associated with frequent cell damage and repair, and that they are not likely to cause tumors in the absence of prolonged skin irritation. Middle distillates with low polynuclear aromatic hydrocarbon content have not been identified as a carcinogen by IARC.

**Germ Cell Mutagenicity:** Not expected to cause heritable genetic effects.

**Reproductive Toxicity:** Not expected to cause reproductive toxicity.

## 11.2 Information on Hazardous Components

### Naphthalene

**Carcinogenicity:** Naphthalene has been evaluated in two year inhalation studies in both rats and mice. The US National Toxicology Program (NTP) concluded that there is clear evidence of carcinogenicity in male and female rats based on increased incidences of respiratory epithelial adenomas and olfactory epithelial neuroblastomas of the nose. NTP found some evidence of carcinogenicity in female mice (alveolar adenomas) and no evidence of carcinogenicity in male mice. Naphthalene has been identified as a carcinogen by IARC and NTP.

## Section 12: Ecological Information

### 12.1 Toxicity

Experimental studies of gas oils show that acute aquatic toxicity values are typically in the range 2-20 mg/L. These values are consistent with the predicted aquatic toxicity of these substances based on their hydrocarbon compositions. They should be regarded as toxic to aquatic organisms, with the potential to cause long term adverse effects in the aquatic environment. Classification: H411; Chronic Cat 2.

### 12.2 Persistence and degradability

Gas oils are complex combinations of individual hydrocarbon species. Based on the known or expected properties of individual constituents, category members are not predicted to be readily biodegradable. Some hydrocarbon constituents of gas oils are predicted to meet the criteria for persistence; on the other hand, some components can be easily degraded by microorganisms under aerobic conditions.

**Persistence per IOPC Fund definition:** Non-Persistent

### 12.3 Bioaccumulative potential

Gas oil components have measured or calculated Log Kow values in the range of 3.9 to 6 which indicates a high potential to bioaccumulate. Lower molecular weight compounds are readily metabolized and the actual bioaccumulation potential of higher molecular weight compounds is limited by the low water solubility and large molecular size.

### 12.4 Mobility in soil and environmental fate

Releases to water will result in a hydrocarbon film floating and spreading on the surface. For the lighter components, volatilization is an important loss process and reduces the hazard to aquatic organisms. In air, the hydrocarbon vapors react readily with hydroxyl radicals with half-lives of less than one day. Photooxidation on the water surface is also a significant loss process particularly for polycyclic aromatic compounds. In water, the majority of components will be adsorbed on sediment. Adsorption is the most predominant physical process on release to soil. Adsorbed hydrocarbons will slowly degrade in both water and soil.

### 12.5 Results of PBT and vPvB Assessment

Not a PBT or vPvB substance.

### 12.6 Other Adverse Effects

None anticipated.



## Section 13: Disposal Considerations

### 13.1 Waste treatment methods

**European Waste Code:** 13 07 01\* fuel oil and diesel

This material, if discarded as produced, would be considered as hazardous waste pursuant to Directive 91/689/EEC on hazardous waste, and subject to the provisions of that Directive unless Article 1(5) of that Directive applies.

This code has been assigned based upon the most common uses for this material and may not reflect contaminants resulting from actual use. Waste generators/producers are responsible for assessing the actual process used when generating the waste and its contaminants in order to assign the proper waste disposal code.

Disposal must be in accordance with Directive 2006/12/EC and other applicable national or regional provisions, and based upon material characteristics at time of disposal. For incineration of waste, follow Directive 2000/76/EC. For landfill of waste, follow Directive 1999/31/EC. Product is suitable for burning in an enclosed controlled burner for fuel value if >5000 BTU, or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products. Follow Directive 2000/76/EC.

**Empty Containers:** Container contents should be completely used and containers emptied prior to discard. Empty drums should be properly sealed and promptly returned to a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with applicable regulations.

## Section 14: Transport Information

14.1 UN number	UN1202
14.2 UN proper shipping name	DIESEL FUEL <i>or</i> GASOIL <i>or</i> HEATING OIL, LIGHT
14.3 Transport hazard class(es)	3
14.4 Packing group	III
14.5 Environmental hazards	Marine pollutant
14.6 Special precautions for user	<i>If transported in bulk by marine vessel in international waters, product is being carried under the scope of MARPOL Annex I.</i>
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not Applicable

## Section 15: Regulatory Information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EC 1272/2008 - Classification, labelling and packaging of substances and mixtures  
EN166:2002 Eye Protection  
EN 529:2005 Respiratory Protective devices  
BS EN 374-1:2003 Protective gloves against chemicals and micro-organisms  
Workplace Exposure Limits, EH40/2005, Control of Substances Hazardous to Health  
Directive 91/689/EEC on hazardous waste (European Waste Codes)  
Directive 2000/76/EC on incineration of waste  
Directive 1999/31/EC on landfill of waste

**Export Rating:** NLR (No License Required)

### 15.2 Chemical Safety Assessment

A chemical safety assessment has been carried out for the substance/mixture.

## Section 16: Other Information

Date of Issue:	12-Nov-2010
Status:	FINAL
Previous Issue Date:	28-Sep-2009
Revised Sections or Basis for Revision:	Format change
Safety Data Sheet Number:	814648
Language:	English



**List of Relevant Hazard Statements:**

H226: Flammable liquid and vapour  
H302: Harmful if swallowed  
H304: May be fatal if swallowed and enters airways  
H315: Causes skin irritation  
H332: Harmful if inhaled  
H351: Suspected of causing cancer  
H373: May cause damage to organs through prolonged or repeated exposure  
H410: Very toxic to aquatic life with long lasting effects  
H411: Toxic to aquatic life with long lasting effects  
R10: Flammable.  
R20: Harmful by inhalation.  
R22: Harmful if swallowed.  
R38: Irritating to skin.  
R40: Limited evidence of a carcinogenic effect.  
R48/21: Harmful: danger of serious damage to health by prolonged exposure in contact with skin.  
R65: Harmful: may cause lung damage if swallowed.  
R66: Repeated exposure may cause skin dryness or cracking.  
R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Guide to Abbreviations:**

ACGIH = American Conference of Governmental Industrial Hygienists; ADR = Agreement on Dangerous Goods by Road; BMGV = Biological Monitoring Guidance Value; CASRN = Chemical Abstracts Service Registry Number; CEILING = Ceiling Limit (15 minutes); EINECS - European Inventory of Existing Commercial Chemical Substances; EPA = [US] Environmental Protection Agency; Germany-TRGS = Technical Rules for Dangerous Substances; IARC = International Agency for Research on Cancer; ICAO/IATA = International Civil Aviation Organization / International Air Transport Association; IMDG = International Maritime Dangerous Goods; Ireland-HSA = Ireland's National Health and Safety Authority; LEL = Lower Explosive Limit; N/A = Not Applicable; N/D = Not Determined; NTP = [US] National Toxicology Program; PBT = Persistent, Bioaccumulative and Toxic; RID = Regulations Concerning the International Transport of Dangerous Goods by Rail; STEL = Short Term Exposure Limit (15 minutes); TLV = Threshold Limit Value; TWA = Time Weighted Average (8 hours); UEL = Upper Explosive Limit; UK-EH40 = United Kingdom EH40/2005 Workplace Exposure Limits; vPvB = very Persistent, very Bioaccumulative

**Disclaimer of Expressed and implied Warranties:**

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