NOVA Chemicals®

Material Safety Data Sheet

Material Name: **Carbon Dioxide Gas**

MSDS ID: NOVA-0026

Section 1 - Product and Company Identification

Synonyms: CO_2, Carbonic acid anhydride, carbonic acid gas, acid gas
Chemical Name: Carbon Dioxide gas
Chemical Family: Inorganic gas
Material Use: Petrochemical industry, enhanced oil recovery, fire suppressant
Chemical Formula: CO_2

NOVA Chemicals
P.O. Box 2518, Station M
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Product Information: 1-412-490-4063
MSDS Information Email:
msdsemail@novachem.com

EMERGENCY Telephone Numbers:
North America (Canada and US):
1-800-561-6682, 1-403-314-8767 (NOVA Chemicals) (24 hours)
1-800-424-9300 (CHEMTREC-USA) (24 hours)
1-613-996-6666 (Canutec-Canada) (24 hours)
Mexico and South America: +44 (0) 1235 239 670 (NCEC) (24 hours)

Section 2 - Hazards Identification

NFPA Ratings: Health: 2 **Fire:** 0 **Reactivity:** 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Emergency Overview

WARNING! This product is immediately harmful by inhalation. This product is a colourless, compressed gas with a minimal to strong, unpleasant odour. Gas will not burn. Hydrogen sulphide may cause severe irritation, and at high levels can cause loss of smell, nausea, vomiting, and possibly death. Excessive inhalation of carbon dioxide gas can cause suffocation (asphyxiation). Symptoms include headache, dizziness, shortness of breath, muscular weakness, heart beat irregularities, drowsiness, ringing in the ears, confusion, convulsions, coma, and eventually death.

Potential Health Effects: Eye

Contact with the gas may cause irritation, due to hydrogen sulphide. Prolonged exposure may result in dry eyes, tearing, burning and blurring of vision.

Potential Health Effects: Skin

Contact with the pressurized gas may be mildly irritating. Product does not penetrate through the skin. High (damaging) noise levels can be associated with high-pressure gas release.

Potential Health Effects: Ingestion

Ingestion of a gas is extremely unlikely.

Potential Health Effects: Inhalation

This product is an asphyxiant gas that can cause unconsciousness and /or death if OXYGEN levels are sufficiently reduced. Hydrogen sulphide may cause eye, throat and skin irritation, and at higher levels can cause severe irritation, loss of smell, nausea and vomiting. Excessive inhalation of carbon dioxide causes headache, dizziness, nausea and loss of coordination, and in extreme conditions coma and possibly death. High carbon dioxide concentrations may trigger heartbeat irregularities.

Section 3 - Composition/Information on Ingredients

CAS #	Component	Percent by Wt.
124-38-9	Carbon dioxide	93-98
74-84-0	Ethane	1-2
Not Available	Mixed C3 & C4 hydrocarbons *	<0.1-1
7783-06-4	Hydrogen sulphide	≤0.07

Additional Information

* Mixed C3 & C4 hydrocarbons include propane (CAS # 74-98-6) and butane (CAS # 106-97-8).

This material is a controlled product under Canadian WHMIS regulations.
This product is regulated as a hazardous material /dangerous goods for transportation.

See Section 8 for applicable exposure limits. See Section 11 for applicable toxicity data.

Section 4 - First Aid Measures

First Aid: Eyes

Remove contact lenses, if it can be done safely. Immediately flush eyes with water for at least 15 minutes, while holding eyelids open. Seek medical attention if symptoms develop or persist.

First Aid: Skin

Wash immediately with soap and water. Seek medical attention if symptoms develop or persist or if experiencing difficulty in hearing or if pain or other injury occurs.

First Aid: Inhalation

Move affected individual to non-contaminated air. Loosen tight clothing such as a collar, tie, belt or waistband to facilitate breathing. Seek immediate medical attention if the individual is not breathing, is unconscious or if any other symptoms persist. WARNING: Contact through mouth-to-mouth resuscitation may pose a secondary risk to the rescuer. Avoid mouth-to-mouth contact by using a mouth shield or guard to perform artificial respiration.

First Aid: Ingestion

Ingestion of a gas is extremely unlikely. Seek medical attention if symptoms develop or persist.

First Aid: Notes to Physician

For more detailed medical emergency support information call 1-800-561-6682 or 1-403-314-8767 (24 hours, NOVA Chemicals Emergency Response). Treat unconsciousness, nausea, hypotension, seizures and cardiac arrhythmias in the conventional manner. Sympathomimetics or catecholamines should be avoided or used with caution (lowest effective dose) because of possible cardiac sensitization. There is no proven antidote for hydrogen sulphide poisoning. Administer oxygen by mask if there is respiratory distress.

Section 5 - Fire Fighting Measures

See Section 9: Physical Properties for flammability limits, flash point and auto-ignition information.

General Fire Hazards

This product does not burn and does not support combustion. It can accumulate in low or confined areas creating a hazardous low oxygen atmosphere, and possible exposures to toxic hydrogen sulphide gas. Consider need for immediate emergency isolation and evacuation for at least 50 to100 metres in all directions if pipeline or major vessel is involved in a fire.

Explosion Hazards

Not an explosion hazard. If exposed to high heat, pressurized pipelines and vessels may rupture due to thermal expansion of gas. Evacuate personnel to a distance of at least 800 metres if pipeline or major vessel rupture is possible.

Hazardous Combustion Products

This product does not support combustion. Will produce carbon monoxide, and trace sulphur oxides /sulphur dioxide when heated to temperatures above 1649°C.

Extinguishing Media

Does not burn. Carbon dioxide acts as an extinguishing agent. Select extinguishing agent suitable for materials that are burning.

Fire Fighting Equipment/Instructions

Reference 2008 Emergency Response Guidebook, Guide No. 120 for additional details and instructions. If a container is involved in a surrounding fire, position upwind. Keep unnecessary personnel away. Move containers from fire area if you can do so without risk. Fight fire from maximum distance or use unmanned holders or monitor nozzles. Immediately withdraw in case of fire and container venting or heat discolouration of a container. Let uncontrolled fires burn off. Fire fighters should wear full-face, self-contained breathing apparatus and thermal protective clothing. Avoid inhaling any smoke and combustion materials. Remove and clean or destroy any contaminated clothing. Cool containers with flooding quantities of water until well after the fire is out. Control runoff waters to prevent entry into sewers, drains, ditches, underground or confined spaces and waterways.

Section 6 - Accidental Release Measures

Evacuation Procedures

Isolate area for at least 25 metres in all directions. Keep unnecessary personnel away.

Small Spills

Stop the gas leak if it is safe to do so. Ensure maximum area ventilation. Check oxygen, carbon dioxide and hydrogen sulphide levels prior to approaching the gas release site or prior to entering nearby confined spaces or buildings.

Large Spills

Isolate area for at least 100 metres in all directions. Stop the gas leak if it is safe to do so. Ensure maximum area ventilation. Let gases dissipate. Prevent entry into buildings, basements or confined areas. Check oxygen, carbon dioxide and hydrogen sulphide levels when approaching the gas release site or prior to entering confined spaces or buildings.

Special Procedures

Contact local police/emergency services and appropriate emergency telephone numbers provided in Section 1. Ensure that statutory and regulatory reporting requirements in the applicable jurisdiction are met. Wear appropriate protective equipment and clothing during cleanup. Individuals without appropriate protective equipment should be excluded from area of spill until cleanup has been completed.

See Section 8 for recommended Personal Protective Equipment and see Section 13 for waste disposal considerations.

Section 7 - Handling and Storage

Handling Procedures

Keep locked up or secured. Handle in fully enclosed, grounded, properly designed and approved transfer and storage systems. Use with adequate ventilation. Avoid inhalation. Post hydrogen sulphide and other warning signs. Keep away from uncontrolled heat and incompatible materials. Check air levels of oxygen and hydrogen sulphide prior to entering confined spaces or buildings. Wear suitable protective equipment. No smoking or open flames permitted in storage, use or handling areas.

Storage Procedures

Storage area should be clearly identified, well illuminated, clear of obstruction and accessible only to trained and authorized personnel. Store in properly designed and approved pressure containers and away from incompatible materials. Store and use away from heat. Store according to applicable codes or regulations for compressed gases as applicable to cylinders, vessels, piping, buildings, rooms, cabinets, allowable quantities and minimum storage distances.

See Section 8: Exposure Controls/Personal Protection for appropriate Personal Protective Equipment. See Section 10 for information on Incompatibilities.

Section 8 - Exposure Controls / Personal Protection

Exposure Guidelines

A: General Product Information

Refer to published exposure limits - use effective control measures and PPE to maintain worker exposure to concentrations that are below these limits. Ensure that eyewash stations and safety showers are in close proximity to work locations.

B: Component Exposure Limits

ACGIH, OSHA, NIOSH, EPA, Alberta, and Ontario exposure limit lists have been checked for major components listed with CAS registry numbers. Other exposure limits may apply, check with proper authorities.

*Note: The Vacated OSHA Permissible Exposure Limits (PELs) are those provided in the 1989 update to OSHA's Air Contaminants Standard 29 CFR 1910.1000. These limits were vacated by the U.S. Court of Appeals, Eleventh Circuit but may be enforceable in some states.

Carbon dioxide (124-38-9)

ACGIH:	5000 ppm TWA; 9000 mg/m3 TWA; 30,000 ppm STEL; 54,000 mg/m3 STEL
OSHA (Vacated)*:	10,000 ppm TWA; 18,000 mg/m3 TWA; 30,000 ppm STEL; 54,000 mg/m3 STEL
OSHA (Final):	5000 ppm TWA; 9000 mg/m3 TWA
NIOSH:	5000 ppm TWA; 9000 mg/m3 TWA; 30,000 ppm STEL; 54,000 mg/m3 STEL 40,000 ppm IDLH
Alberta:	5000 ppm TWA; 9000 mg/m3 TWA; 30,000 ppm STEL; 54,000 mg/m3 STEL
Ontario:	5000 ppm TWA; 30,000 ppm STEL

Ethane (74-84-0)

ACGIH:	1000 ppm TWA (listed under Aliphatic hydrocarbon gases alkane C1-C4)
Alberta:	1000 ppm TWA
Ontario:	1000 ppm TWA (listed under Aliphatic hydrocarbon gases alkane C1-C4)

Propane (74-98-6)

ACGIH:	1000 ppm TWA (listed under Aliphatic hydrocarbon gases alkane C1-C4)
OSHA (Vacated)*:	1000 ppm TWA; 1800 mg/m3 TWA
OSHA (Final):	1000 ppm TWA; 1800 mg/m3 TWA
NIOSH:	1000 ppm TWA; 1800 mg/m3 TWA
	2100 ppm IDLH (10% LEL)
Alberta:	1000 ppm TWA
Ontario:	1000 ppm TWA (listed under Aliphatic hydrocarbon gases alkane C1-C4)

Butane (106-97-8)

ACGIH:	1000 ppm TWA (listed under Aliphatic hydrocarbon gases alkane C1-C4)
OSHA (Vacated)*:	800 ppm TWA; 1900 mg/m3 TWA
NIOSH:	800 ppm TWA; 1900 mg/m3 TWA
Alberta:	1000 ppm TWA
Ontario:	800 ppm TWA

Hydrogen sulphide (7783-06-4)

ACGIH:	1 ppm TWA; 1.4 mg/m3; 5 ppm STEL; 7 mg/m3 STEL
OSHA (Vacated)*:	10 ppm TWA; 14 mg/m3 TWA; 15 ppm STEL; 21 mg/m3 STEL
OSHA (Final):	20 ppm Ceiling
NIOSH:	10 ppm Ceiling (10 min); 15 mg/m3 Ceiling (10 min)
	100 ppm IDLH
Alberta:	10 ppm TWA; 14 mg/m3 TWA; 15 ppm Ceiling; 21 mg/m3 Ceiling
Ontario:	10 ppm TWA; 15 ppm STEL

ENGINEERING CONTROLS

Engineering methods to reduce hazardous exposure are preferred controls. Methods include mechanical ventilation (dilution and local exhaust) process or personal enclosure, remote and automated operation, control of process conditions, leak detection and repair systems, and other process modifications. Ensure all exhaust ventilation systems are discharged to outdoors, away from air intakes and ignition sources. Supply sufficient replacement air to make up for air removed by exhaust systems. Administrative (procedure) controls and use of personal protective equipment may also be required.

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment: Eyes/Face

Wear safety glasses; use chemical goggles or face shield when handling carbon dioxide under pressure.

Personal Protective Equipment: Skin/Hands/Feet

Use impervious gloves when handling product. Wear chemical-resistant safety footwear with good traction to prevent slipping. Work clothing that sufficiently prevents skin contact should be worn, such as coveralls and/or long sleeves and pants.

Personal Protective Equipment: Respiratory

If conditions exist where exposure controls are insufficient to maintain product concentrations below allowable exposure limits, approved, air- supplied breathing apparatus should be worn.

Personal Protective Equipment: General

Personal protective equipment (PPE) should not be considered a long-term solution to exposure control. Employer programs to properly select, fit, maintain, and train employees to use equipment must accompany PPE. Consult a competent industrial hygiene resource, the PPE manufacturer's recommendation, and/or applicable regulations to determine hazard potential and ensure adequate protection.

Section 9 - Physical & Chemical Properties

Physical State and Appearance:	Gas (Compressed)	**Colour:**	Colourless
Odour:	Odourless. If H2S is present, gas would have an unpleasant, "rotten egg" smell.	**Odour Threshold:**	If H2S present: 0.001-.013 ppm H2S (detection); loss of ability to smell H2S begins at 50 ppm; sense of smell is deadened above 100 ppm H2S
pH:	3.7 (forms carbonic acid in saturated aqueous solution)	**Vapour Pressure:**	3485 kPa at 0°C
Vapour Density (Air=1):	1.52 at 15°C	**Boiling Point:**	Not applicable
Melting Point:	Sublimes at -78°C	**Solubility (H2O):**	Slightly soluble; 83.5 to 90 ml/100g at 20°C
Specific Gravity (Water=1):	Not applicable	**Evaporation Rate (n-Butyl Acetate=1):**	Not applicable
Percent Volatile:	100%	**Critical Temperature:**	31.1°C
Max. Pipeline Delivery Pressure:	116 psi to 174 psi	**Auto Ignition:**	Not applicable
Flash Point:	Not applicable	**Flash Point Method:**	Not applicable
Upper Flammable Limit (UFL):	Not applicable	**Lower Flammable Limit (LFL):**	Not applicable
Flammability Classification:	Not flammable		

Section 10 - Stability & Reactivity Information

Chemical Stability

This product is a stable product.

Chemical Stability: Conditions to Avoid

Keep away from high heat.

Incompatibility

Carbon dioxide is compatible with most materials. Hydrogen sulphide is a strong reducing agent and is highly reactive. It can rapidly corrode metals and should not be in contact with metal oxides and strong oxidants. Carefully select and test equipment, gaskets, and hoses periodically to ensure integrity and compatibility.

Possibility of Hazardous Reactions or Hazardous Polymerization

Hazardous polymerization not likely to occur.

Corrosivity

Product is not corrosive to the common metals, e.g. carbon steel.

Hazardous Decomposition

Will produce carbon monoxide, oxygen and trace sulphur oxides /sulphur dioxide when heated to temperatures above 1649°C.

Section 11 - Toxicological Information

A: Acute Toxicity - General Product Information

This product is considered acutely toxic based on acute carbon dioxide inhalation toxicity data in humans. Small amounts of carbon dioxide are produced during cellular metabolism and are a normal component of the body, excreted from the body as exhaled air. At very high exposures, carbon dioxide is an asphyxiant and also a respiratory stimulant and causes central nervous system effects. Symptoms of asphyxia or hypoxia include headache, dizziness, shortness of breath, muscular weakness, heart beat irregularities, drowsiness, ringing in the ears, confusion, convulsions, coma, and eventually death. The following additional information has been found for its other components:

Ethane - Inhalation of ethane by Guinea pigs, in concentrations of 2.2 to 5% in air, for 2 hours produced slight drowsiness and irregular breathing, but no other toxic effects. At 15 to 19%, ethane mixed in oxygen is a weak cardiac sensitizer.

C3-C4 hydrocarbons - Low molecular weight hydrocarbons have anaesthetic effects and may cause heartbeat irregularities and central nervous system (CNS) depression. These gases can cause suffocation due to low oxygen.

Hydrogen sulphide - Irritating to eyes, nose and throat at 50 ppm. At higher exposures (>100 ppm), there is a loss of smell, and possible headache, nausea, vomiting and dizziness. Prolonged exposure to levels over 200 ppm can result in lung damage and possibly death. Extremely high exposures directed into eyes also resulted in corneal lesions.

B: Acute Toxicity - LD50/LC50

Carbon Dioxide (124-38-9)
Inhalation LC50 Human: 100,000 ppm/min
Ethane (74-84-0)
Inhalation LC50 Rat: 658 mg/L/4H
Propane (74-98-6)
Inhalation LC50 Rat: 658 mg/L/4H
Butane (106-97-8)
Inhalation LC50 Rat: 658 g/m3/4H
Hydrogen sulphide (7783-06-4)
Inhalation LC50 Mouse: 634-673 ppm/1H; 335 ppm/4H; Inhalation LC50 Rat: 587 ppm/2H; 415-501 ppm/4H; 335ppm/6H

C: Chronic Toxicity - General Product Information

Chronic exposure to carbon dioxide can produce adaptation as well as metabolic acidosis. In addition, long-term exposure can stress the adrenal cortex because of constant respiratory stimulation. Testing for reproductive effects is inconclusive. The following additional information has been found for its other components:

Butane - Minimal long-term toxic effects reported in repeat dose toxicity tests in animals.

Hydrogen Sulphide - few known chronic effects in humans. Chronic inhalation in animal studies has shown nasal lesions, reduced body weight, and mild brain dysfunction. Testing for reproductive effects is inconclusive.

D: Chronic Toxicity - Carcinogenic Effects

None of this product's components are listed by ACGIH, EPA, IARC, OSHA, or NTP as a carcinogen.

Section 12 - Ecological Information

Ecotoxicity

A: General Product Information

Carbon dioxide is naturally present in air (0.035%). Increases in atmospheric concentrations are linked to climate change/global warming. May decrease the pH of aqueous systems, impacting aquatic life.

B: Component Analysis - Ecotoxicity - Aquatic/Terrestrial Toxicity

Hydrogen sulphide (7783-06-4)
96 Hr LC50 Lepomis macrochirus: 0.0448 mg/L [flow-through]; 96 Hr LC50 Pimephales promelas: 0.016 mg/L [flow-through]
96 Hr EC50 Gammarus pseudolimnaeus: 0.022 mg/L

Environmental Fate/Mobility

Product should be absorbed into the natural carbon and sulphur cycles without long-term adverse impacts.

Persistence/Degradability

Product will not cause any long-term negative effects. Carbon dioxide is a primary degradation product from all organic matter.

Bioaccumulation/Accumulation

Product will not bioaccumulate.

Section 13 - Disposal Considerations

Canadian Waste Information

This product is not known to be a hazardous waste according to Canadian regulations. The use, mixing or processing of this product may alter its properties or hazards. Contact federal, provincial and local authorities in order to generate or ship a waste material associated with this product to ensure materials are handled appropriately and meet all criteria for disposal of hazardous waste. DO NOT ATTEMPT TO DISPOSE OF BY UNCONTROLLED IGNITION.

See Section 7: Handling and Storage and Section 8: Exposure Controls/Personal Protection for additional handling information that may be applicable for safe handling and the protection of employees.

Waste generator is advised to carefully consider hazardous properties and control measures needed for other materials that may be found in the waste.

Section 14 - Transportation Information

US DOT Information

Shipping Name: Carbon Dioxide, mixture
UN/NA #: UN1013 **Hazard Class:** 2.2
Required Label(s): NON-FLAMMABLE GAS
Additional Info.: 2008 Emergency Response Guidebook, Guide No. 120.

Canadian TDG Information

Shipping Name: Carbon Dioxide, mixture
UN #: UN1013 **Hazard Class:** 2.2
Required Label(s): NON-FLAMMABLE GAS
Additional Info.: 2008 Emergency Response Guidebook, Guide No. 120.

International Air Transport Association (IATA) and International Civil Aviation Organization (ICAO) Information

Shipping Name: Carbon Dioxide, mixture
UN #: UN1013 **Hazard Class:** 2.2
Required Label(s): NON-FLAMMABLE GAS

International Maritime Dangerous Goods (IMDG) Code

Shipping Name: Carbon Dioxide, mixture
UN #: UN1013 **Hazard Class:** 2.2
Required Label(s): NON-FLAMMABLE GAS
Additional Info.: EmS No.: F-C, S-V
Marine Pollutant: No

Section 15 - Regulatory Information

Canadian Regulations - Federal and Provincial

Canadian Environmental Protection Act (CEPA): All components of this product are on the Domestic Substances List (DSL) or are exempt and are acceptable for use under the provisions of CEPA.

WHMIS Ingredient Disclosure List (IDL)

The following components are identified under the Canadian Hazardous Products Act - Ingredient Disclosure List (IDL):

Component	CAS #	Minimum Concentration
Carbon dioxide	124-38-9	1 %
Mixed C3 & C4 Hydrocarbons	Not available	1 % (related to Butane)
Hydrogen sulphide	7783-06-4	1 %

WHMIS Classification

Workplace Hazardous Materials Information System (WHMIS): This product has been classified in accordance with the hazard criteria of the CPR (Controlled Products Regulations) and the MSDS contains all the information required by the CPR.
WHMIS CLASS A: Compressed gas
WHMIS CLASS D1B: Toxic

Other Regulations

Ongoing occupational hygiene, medical surveillance programs, site emission or spill reporting may be required by federal or provincial regulations. Check for applicable regulations.

For additional regulatory information, please contact your NOVA Chemicals' representative or NOVA Chemicals' Product Integrity group.

Section 16 - Other Information

Label Information

WARNING! This product is immediately harmful by inhalation. This product is a colourless compressed gas with a minimal to strong, unpleasant odour. Gas will not burn. Hydrogen sulphide may cause severe irritation, and at high levels can cause loss of smell, nausea vomiting, and possibly death. Excessive inhalation of carbon dioxide gas can cause suffocation (asphyxiation). Symptoms include headache, dizziness, shortness of breath, muscular weakness, heart beat irregularities, drowsiness, ringing in the ears, confusion, convulsions, coma, and eventually death.

FIRST AID:
SKIN: Wash immediately with soap and water. Seek medical attention if symptoms develop or persist or if experiencing difficulty in hearing or if pain or other injury occurs.
EYES: Remove contact lenses, if it can be done safely. Immediately flush eyes with water for at least 15 minutes, while holding eyelids open. Seek medical attention if symptoms develop or persist.
INHALATION: Move affected individual to non-contaminated air. Loosen tight clothing such as a collar, tie, belt or waistband to facilitate breathing. Seek immediate medical attention if the individual is not breathing, is unconscious or if any other symptoms persist. WARNING: Contact through mouth-to-mouth resuscitation may pose a secondary risk to the rescuer. Avoid mouth-to-mouth contact by using a mouth shield or guard to perform artificial respiration.
INGESTION: Ingestion of a gas is extremely unlikely. Seek medical attention if symptoms develop or persist.
IN CASE OF A LARGE SPILL: Isolate area for at least 100 metres in all directions. Stop the gas leak if it is safe to do so. Ensure maximum area ventilation. Let gases dissipate. Prevent entry into buildings, basements or confined areas. Check oxygen, carbon dioxide and hydrogen sulphide levels when approaching the gas release site or prior to entering confined spaces or buildings.

References

Available on request.

Special Considerations

For additional information on equipment bonding and grounding, refer to the American Petroleum Institute (API) Recommended Practice 2003, "Protection Against Ignitions Arising out of Static, Lightning, and Stray Currents" or National Fire Protection Association (NFPA) 77, "Recommended Practice on Static Electricity".

Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists; CAS = Chemical Abstracts Service; CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act; CPR = Controlled Products Regulations; DOT = Department of Transportation; DSL = Domestic Substances List; EINECS = European Inventory of Existing Commercial Substances; EPA = Environmental Protection Agency; EU = European Union; FDA = Food and Drug Administration; HMIS = Hazardous Materials Information System; IARC = International Agency for Research on Cancer; IDL = Ingredient Disclosure List; IDLH = Immediately Dangerous to Life or Health; Kow = Octanol/water partition coefficient; LEL = Lower Explosive Limit; NFPA = National Fire Protection Association; NIOSH = National Institute for Occupational Safety and Health; NJTSR = New Jersey Trade Secret Registry; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; RCRA = Resource Conservation and Recovery Act; SARA = Superfund Amendments and Reauthorization Act; STEL = Short Term Exposure Limit; TDG = Transportation of Dangerous Goods; TSCA = Toxic Substances Control Act; TWA = Time Weighted Average

MSDS Prepared by: NOVA Chemicals

MSDS Information Phone Number: 1-412-490-4063

Other Information

Notice to Reader:
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This is the end of MSDS # NOVA-0026.