

MATERIAL SAFETY DATA SHEET**ANHYDROUS AMMONIA**TI**DISTRIBUTORS:**
TANNER INDUSTRIES, INC.**DIVISIONS:**

NATIONAL AMMONIA	NORTHEASTERN AMMONIA
HAMLER INDUSTRIES	BOWER AMMONIA & CHEMICAL

735 Davisville Road, Third Floor, Southampton, PA 18966; 215-322-1238

CORPORATE EMERGENCY TELEPHONE NUMBER: 800-643-6226 CHEMTREC: 800-424-9300**DESCRIPTION****CHEMICAL NAME:** Ammonia, Anhydrous**CAS REGISTRY NO:** 7664-41-7**SYNONYMS:** Ammonia**CHEMICAL FAMILY:** Inorganic Nitrogen Compound**FORMULA:** NH₃**MOL. WT:** 17.03 (NH₃)**COMPOSITION:** 99+% Ammonia**STATEMENT OF HEALTH HAZARD****HAZARD DESCRIPTION:**

Ammonia is an irritant and corrosive to the skin, eyes, respiratory tract and mucous membranes. Exposure to liquid or rapidly expanding gases may cause severe chemical burns and frostbite to the eyes, lungs and skin. Skin and respiratory related diseases could be aggravated by exposure.

Not recognized by OSHA as a carcinogen.

Not listed in the National Toxicology Program.

Not listed as a carcinogen by the International Agency for Research on Cancer.

EXPOSURE LIMITS FOR AMMONIA: Vapor

OSHA	50 ppm,	35 mg / m ³ PEL	8 hour TWA
NIOSH	35 ppm,	27 mg / m ³ STEL 15 minutes	
	25 ppm,	18 mg / m ³ REL	10 hour TWA
	300 ppm,	IDLH	
ACGIH	25 ppm,	18 mg / m ³ TLV	8 hour TWA
	35 ppm,	27 mg / m ³ STEL 15 minutes	

TOXICITY: LD 50 (Oral / Rat) 350 mg / kg**PHYSICAL DATA****BOILING POINT:** -28°F at 1 Atm.**PH:** N/A**SPECIFIC GRAVITY OF GAS (air = 1):** 0.596 at 32°F**SPECIFIC GRAVITY OF LIQUID (water = 1):** 0.682 at -28°F

(Compared to water at 39°F).

PERCENT VOLATILE: 100% at 212°F**APPEARANCE AND ODOR:** Colorless liquid or gas with pungent odor.**CRITICAL TEMPERATURE:** 271.4 °F**GAS SPECIFIC VOLUME:** 20.78 Ft³/Lb at 32°F and 1 Atm.**VAPOR DENSITY:** 0.0481 Lb/Ft³ at 32° F**LIQUID DENSITY:** 38.00 Lb/Ft³ at 70° F**APPROXIMATE FREEZING POINT:** -108°F**WEIGHT (per gallon):** 5.15 pounds at 60° F**VAPOR PRESSURE:** 114 psig at 70° F**SOLUBILITY IN WATER (per 100 pounds of water):** 86.9 pounds at 32°F, 51 pounds at 68°F**SURFACE TENSION:** 23.4 Dynes / cm at 52°F**CRITICAL PRESSURE:** 111.5 atm

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SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN:

Stop source of leak if possible, provided it can be done in a safe manner. Leave the area of a spill by moving laterally and upwind. Isolate the affected area. Non-responders should evacuate the area, or shelter in place. Only properly trained and equipped persons should respond to an ammonia release. Wear eye, hand and respiratory protection and protective clothing; see PROTECTIVE EQUIPMENT. Stay upwind and use water spray downwind of container to absorb the evolved gas. Contain spill and runoff from entering drains, sewers, and water systems by utilizing methods such as diking, containment, and absorption. CAUTION: ADDING WATER DIRECTLY TO LIQUID SPILLS WILL INCREASE VOLATILIZATION OF AMMONIA, THUS INCREASING THE POSSIBILITY OF EXPOSURE.

WASTE DISPOSAL:

Listed as hazardous substance under CWA (40 CFR 116.4, 40 CFR 117.3). Reportable Quantity 100 pounds. Classified as hazardous waste under RCRA (40CFR 261.22 Corrosive #D002). Comply with all regulations. Suitably diluted product may be disposed of on agricultural land as fertilizer. Keep spill from entering streams, lakes, or any water systems.

SPECIAL PROTECTION AND PROCEDURES

RESPIRATORY PROTECTION:

Respiratory protection approved by NIOSH/MSHA for ammonia must be used when applicable safety and health exposure limits are exceeded. For escape in emergencies, MSHA/NIOSH approved respiratory protection that consists of a full-face gas mask and canisters approved for ammonia is required. Refer to 29 CFR 1910.134 and ANSI: Z88.2 for requirements and selection. A positive pressure SCBA is required for entry into ammonia atmospheres at or above 300 ppm (IDLH).

EYE PROTECTION: Chemical splash goggles should be worn when handling anhydrous ammonia. A face shield can be worn over chemical splash goggles as additional protection. Do not wear contact lenses when handling anhydrous ammonia.

VENTILATION:

Local exhaust should be sufficient to keep ammonia vapor to 25 ppm or less.

PROTECTIVE EQUIPMENT:

At a minimum, splash proof, chemical safety goggles, ammonia resistant, gloves (such as rubber), and ammonia-impervious clothing should be worn to prevent contact during normal loading, unloading and transfer operations and handling small spills. Face shield and boots can be worn as additional protection.

Respiratory protection approved by NIOSH/MSHA for ammonia must be used when applicable safety and health exposure limits are exceeded. For a hazardous material release response, Level A and/or Level B ensemble including positive-pressure SCBA should be used. A positive pressure SCBA is required for entry into ammonia atmospheres at or above 300 ppm (IDLH). Refer to 29 CFR 1910.132 through 1910.138 for personal protective equipment requirements.

SPECIAL PRECAUTIONS

STORAGE AND HANDLING:

Only trained persons should handle anhydrous ammonia. Store in cool (26.7°C / 80°F) and well-ventilated areas, with containers tightly closed. OSHA 29 CFR 1910.111 prescribes handling and storage requirements for anhydrous ammonia as a hazardous material. Use only stainless steel, carbon steel or black iron for anhydrous ammonia containers or piping. Do not use plastic. Do not use any non-ferrous metals such as copper, brass, bronze, aluminum, tin, zinc or galvanized metals. Protect containers from physical damage. Keep away from ignition sources, especially in indoor spaces.

WORK-PLACE PROTECTIVE EQUIPMENT:

Protective equipment should be stored near, but outside of anhydrous ammonia area. Water for first aid, such as an eyewash station and safety shower, should be kept available in the immediate vicinity. See 29 CFR 1910.111 for workplace requirements.

DISPOSAL:

See WASTE DISPOSAL. Classified as RCRA Hazardous Waste due to corrosivity with designation D002, if disposed of in original form.



Material Safety Data Sheet

Crystal Clean 142⁺ Mineral Spirits



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Revision Date: 07/29/2005

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Crystal Clean 142⁺ Mineral Spirits

Supplier: Heritage-Crystal Clean, LLC
2250 Point Boulevard - Suite 250
Elgin, IL 60123-7873

Technical Contact: Heritage-Crystal Clean, LLC - EHS Department
Telephone: 877-938-7948 or 847-836-5670
Fax: 847-836-5677
Email: ehs@crystal-clean.com
Website: www.crystal-clean.com

Synonyms: Mineral Spirits, Petroleum Naphtha, Parts Cleaner Solvent, Stoddard Solvent, Petroleum Distillates

EMERGENCY TELEPHONE NUMBERS

Medical:	Local Poison Control Center or Hospital
Technical Questions:	Heritage-Crystal Clean, LLC. 877-938-7948
Chemtrec (after hours contact)	800-424-9300

2. COMPOSITION / INFORMATION OF INGREDIENTS

Component Name	CAS No.	Wt %
Distillates (petroleum), aliphatic	64742-47-8	100

This solvent may be produced from several sources utilizing different refining processes that generate different CAS registry numbers based on the refining process used. Petroleum solvent naphtha, medium aliphatic is a complex stream of predominantly C9 to C12 hydrocarbons.

3. HAZARDS IDENTIFICATION

Major Routes of Entry: Skin contact. Inhalation

OSHA Physical Hazard Classification: Combustible

Potential Health Effects:

Inhalation: High Concentrations of vapor may be harmful if inhaled and may irritate the respiratory tract (nose, throat, and lungs). High concentrations may cause nausea, vomiting, headaches, dizziness, loss of coordination, numbness, and other central nervous system effects.

Crystal Clean 142⁺ Mineral Spirits

breathe, chest congestion, or continued coughing or wheezing. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.

Note to Physician: Inhalation overexposure can produce toxic effects. Monitor for respiratory distress. If coughing or difficult breathing develops, evaluate for upper respiratory tract inflammation, bronchitis, and pneumonitis. Vigorous anti-inflammatory/steroid treatment may be required with upper airway or pulmonary edema. Administer 100% humidified oxygen with assisted ventilation, as required.

5. FIRE FIGHTING MEASURES

Flash Point:	>142°F - 146 °F; > 61°C - 63 °C TCC
Auto-ignition Point:	>440°F ; >226°C
Explosive Limits:	1% (lower) - 6% (upper)
NFPA 30 Classification:	Combustible Liquid Class IIIA

Fire and Explosion Hazards: Vapors are heavier than air and may travel along the ground or may be moved by ventilation and ignited by pilot lights, other flames, or other ignition sources. Never use welding or cutting torch on or near drum (even empty) because product, or even residue, can ignite explosively.

Extinguishing Media: Use carbon dioxide, dry chemical, regular foam, or water fog. Do not use a direct stream of water. Material will float and can be reignited on the surface of the water.

Firing Fighting Instructions: Use self-contained breathing apparatus (SCBA). Containers exposed to fire should be kept cool with water spray.

6. ACCIDENTAL RELEASE MEASURES

Small Spill: appropriate inert absorbents, such as vermiculite, floor absorbent, or absorbent booms or pads, can absorb small spills. Avoid breathing vapors and ventilate the area.

Large Spill: Eliminate all ignition sources (flares, flames including pilot lights, electrical sparks). Persons not wearing protective equipment should be excluded from area of spill until clean up has been completed. Stop spill at source if safe to do so. Prevent material from entering confined areas, drains, sewers, streams or other bodies of water. Prevent from spreading. If runoff occurs, notify authorities as required. Prevent run-off to sewers, streams or other bodies of water. If run-off occurs, notify proper authorities as required that a spill has occurred. Pump or Vacuum transfer spilled product to clean containers for recovery. Absorb unrecoverable product. Transfer contaminated absorbent, soil, and other material to proper non-leaking containers for disposal.

Precautions to be taken in Handling and Storing:

Keep containers closed when not in use. When opening covers and outlet caps on storage tanks, use face shield and gloves to avoid possible injury from pressurized hydrocarbon vapors. Do not overheat. Surfaces that are sufficiently hot may ignite liquid material.

All five-gallon pails and larger containers, including tank cars and truck cargo tanks should be grounded and/or bonded when material is transferred to prevent ignition of vapors by static electricity. Hydrocarbon solvents are basically non-conductors of

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Reid Vapor Pressure:	< 0.1 psia (VP @ 38 °C , 100 °F)
Vapor Density (Air=1):	> 1.0
Specific Gravity:	0.78 – 0.80
Percent Volatiles:	100%
Percent VOC:	100%
Lbs/Gal VOC:	6.5 – 6.7
Solubility:	Negligible
Evaporation Rate:	151 (Ether = 1), 0.04 (n-Bu Acetate = 1)

Physical properties given are typical for this product. Exact data varies depending upon manufacturer.

10. STABILITY AND REACTIVITY

Stability:	Stable
Incompatible Materials:	Strong oxidizers.
Hazardous Polymerization:	Will not occur.

Hazardous Decomposition Products: Thermal decomposition may result in an airborne mixture of solids (smoke and soot), liquids (mist), and gases including a complex mixture of fumes, carbon monoxide, carbon dioxide, and other organic hydrocarbons.

Conditions to Avoid: Avoid heat, open flames, strong acids and strong oxidizers.

11. TOXICOLOGICAL INFORMATION

<u>Acute Studies:</u>	Petroleum Distillate:
	Oral (LD ₅₀): > 5,000 mg/kg (rat)
	Inhalation (LC ₅₀): > 5,500 (rat, 4 hours)
	Dermal (LD ₅₀): > 3,000 mg/kg (rabbit)

Miscellaneous Toxicological Information:

Studies on laboratory animals have associated similar materials with eye and respiratory tract irritation. Studies on laboratory animals have shown similar materials to cause skin irritation after repeated or prolonged contact. Repeated direct application of Stoddard Solvent to the skin can produce defatting dermatitis and kidney damage in laboratory animals. Rats developed kidney damage and elevated blood urea nitrogen levels when exposed to a concentration of 1.9 mg/L for 65 days. The kidney damage occurred only in male rats and appeared to involve both the tubules and glomeruli. The significance of these animal study results to human health is unclear.

12. ECOLOGICAL INFORMATION

Acute Toxicity

Fish:	Low toxicity: LC/EC/IC50 . 1000mg/l
Aquatic Invertebrates:	Low toxicity: LC/EC/IC50 . 1000mg/l
Algae:	Low toxicity: LC/EC/IC50 . 1000mg/l

Mobility:	Floats on Water; Adsorbs to soil and has low mobility
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SARA 313: This product does not contain "toxic" chemicals subject to the requirements of Section 313 of Title II of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR 372.

SARA 311 and 312: This product poses the following health hazards as defined in 40 CFR 370 and are subject to the requirements of Sections 311 and 312 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA):

- Immediate (Acute) Health Hazard
- Delayed (Chronic health Hazard
- Fire Hazard

16. OTHER INFORMATION

Reference Documents:

Information provided in this Material Safety Data Sheet is supplied by the manufacturers of the products supplied to Heritage Crystal Clean, L.L.C.

Although reasonable care has been taken in the preparation of this document we extend no warranties and make no representations as to the accuracy or completeness of the information contained therein, and assume no responsibility regardless of the suitability of this information for the user's intended purposes or the consequences of its use. Each individual should make a determination as to the suitability of the information of his or her particular purpose(s).

Heritage-Crystal Clean, L.L.C.

JohnsonDiversey
Clean is just the beginning



DIVOSAN PLUS

HMIS		NFPA	Personal protective equipment		
Health	3	3			
Fire Hazard	1	1			
Reactivity	2	2			

Version Number: 4

Preparation date: 2006-04-18

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: DIVOSAN PLUS

MSDS #: MS0100399

Product code: 3177215, 3177194, 3747804, 3177186, 3177207

Recommended use: Sanitizer.

Manufacturer, importer, supplier:
US Headquarters
JohnsonDiversey, Inc.
8310 16th St.
Sturtevant, Wisconsin 53177-0902
Phone: 1-800-233-1000

Canadian Headquarters
JohnsonDiversey - Canada, Inc.
2401 Bristol Circle
Oakville, Ontario L6H 6P1
Phone: 1-800-668-7171

Emergency telephone number: 1-800-851-7145 (Prosar); 1-651-917-6133 (Int'l Prosar); 01-800-710-3400 (México)

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER. CORROSIVE. CAUSES EYE AND SKIN BURNS. HARMFUL IF INHALED, SWALLOWED OR ABSORBED THROUGH SKIN. OXIDIZER. DO NOT MIX WITH AMMONIA, BLEACH OR OTHER CHLORINATED COMPOUNDS.

Principle routes of exposure: Eye contact. Skin contact. Inhalation.

Eye contact: Corrosive. Causes permanent eye damage, including blindness.

Skin contact: Corrosive. May cause permanent damage. Harmful if absorbed through skin.

Inhalation: May cause respiratory tract irritation. Persons with pre-existing respiratory conditions should be particularly careful about possible respiratory effects.

Ingestion: Corrosive. Causes burns to mouth, throat and stomach.

3. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS

Ingredient(s)	CAS #	Weight %	LD50 Oral - Rat	LD50 Dermal - Rabbit	LC50 Inhalation - Rat
Peracetic acid	79-21-0	5 - 10%	= 263 mg/kg	= 1410 µL/kg	= 0.30 mg/L (1h)
Acetic acid	64-19-7	10 - 20%	= 3310 mg/kg	= 1060 mg/kg	= 11.4 mg/L (1h)
Hydrogen peroxide	7722-84-1	10 - 20%	= 801 mg/kg	= 2000 mg/kg	= 2 mg/L (4h)

4. FIRST AID MEASURES

Eye contact: Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Get medical attention immediately.

Skin contact: Immediately wash off with plenty of water for at least 15 minutes. Get medical attention immediately.

Inhalation: If breathing is affected, remove to fresh air. If person is not breathing, call 911 or an ambulance and then give artificial respiration, preferably by mouth to mouth, if possible. Get medical attention immediately.

Ingestion: Call medical attendant, doctor, or poison control center immediately. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor.

Aggravated Medical Conditions: Persons with pre-existing respiratory conditions should be particularly careful about possible respiratory effects.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Flood with water. Use dry chemical, CO2, water spray or "alcohol" foam.

Specific hazards: Oxidizer. Decomposition releases oxygen, which may intensify fire.

Unusual hazards: None known

Specific methods: No special methods required

11. TOXICOLOGICAL INFORMATION

Acute toxicity Corrosive Oral LD50 estimated to be between 500 - 2000 mg/kg Dermal LD50 estimated to be between 400 - 2000 mg/kg
Component Information: See Section 3
Chronic toxicity: None known
Specific effects
Carcinogenic effects: None known
Mutagenic effects: None known
Reproductive toxicity: None known
Target organ effects: None known

HAZARDOUS COMPONENTS

Ingredient(s)	CAS #	NTP	IARC	OSHA
Hydrogen peroxide	7722-84-1		3	

12. ECOLOGICAL INFORMATION

Environmental Information: No data available

13. DISPOSAL CONSIDERATIONS**Waste from residues / unused products:**

Undiluted product is regulated under environmental and transportation laws as a corrosive waste. Undiluted product is regulated under environmental and transportation laws as an ignitable waste. Dispose of according to all federal, state and local applicable regulations.

RCRA Hazard Class: D002, D001

14. TRANSPORT INFORMATION

DOT/TDG: Please refer to the Bill of Lading/receiving documents for up to date shipping information

15. REGULATORY INFORMATION**International Inventories**

All components of this product are listed on the following inventories: U.S.A. (TSCA), Canada (DSL/NDSL).

U.S. Regulations

EPA Reg. No. : 70627-53

California Proposition 65: This product is not subject to the reporting requirements under California's Proposition 65

STATE RIGHT TO KNOW

Ingredient(s)	CAS #	MARTK:	NJRTK:	PARTK:	RIRTK:
Peracetic acid	79-21-0	X	X	-	X
Acetic acid	64-19-7	X	X	-	X
Hydrogen peroxide	7722-84-1	X	X	-	X
Water	7732-18-5	-	-	-	-

CERCLA/ SARA

Ingredient(s)	CAS #	Weight %	CERCLA/SARA RQ (lbs)	Section 302 TPQ (lbs)	Section 313
Peracetic acid	79-21-0	5 - 10%		500	X
Acetic acid	64-19-7	10 - 20%	5000		
Hydrogen peroxide	7722-84-1	10 - 20%		1000	

CAA HAP/CAA ODS/CWA Priority Pollutants: None

SARA 311/312 Hazard Categories

Immediate: Y
Delayed: N
Fire: Y
Reactivity: N
Sudden Release of Pressure: N

Canada

WHMIS hazard class: C Oxidizing materials , E Corrosive material .

