Boehringer Ingelheim

Scott Wilson
Iowa Department of Natural Resources
Field Office #2
2300 15th Street SW
Mason City, Iowa 50401

Boehringer Ingelheim
Vetmedica, Inc.

RE: Spill Report Number: 080212-SJW-0150

Dear Mr. Wilson:

31 Aug 2012

As required under Iowa Administrative Code 131.2(2), the following is the written spill report for Spill Report #080212-SJW-0150:

A. The release occurred at the Boehringer Ingelheim Vetmedica Inc. facility at 800 5th Street NW in Fort Dodge, Iowa in room 200 of Building 125.
B. The release started at approximately 10:36 PM on 01 August 2012.
C. The release was a 20% mixture of Propylene Glycol and water. The Propylene Glycol (Dow Frost) is manufactured by Dow Chemical. Approximately 5,377 gallons of the mixture (1,075 gallons of Propylene Glycol) was released.
D. It was estimated 25% of the release went to the sanitary sewer and 75% of the release went into the stormsewer, which feeds into the City of Fort Dodge's storm sewer system, which empties into the Des Moines River.
E. The party responsible for the release cannot be identified at this time.
F. The verbal report was made at 1:29AM on 02 August 2012.
G. The weather was clear and a temperature in the high 70's.
H. The person reporting the release was Rodney Kern from Boehringer Ingelheim Vetmedica Inc. located at 800 5th Street NW, Fort Dodge, IA 50501, 515-302-2320.
I. The name of the person who can be contacted for further information is also Rodney Kern from Boehringer Ingelheim Vetmedica Inc. located at 800 5th Street NW, Fort Dodge, IA 50501, 515-302-2320.
J. On 01Aug12, Security Building personnel were notified by a high temperature alarm on air handler #2 at 10:38 PM. A call was made to facility Maintenance, who discovered the casing of a recently installed valve was cracked, releasing chilled water. Facility Maintenance responded by closing chilled water supply valves isolating the failed valve at approximately 11:00PM. The release flowed into a sanitary sewer floor drain located under the valve and flowed down the stairs into a sump pit which was pumped into the sanitary sewer. The release also flowed out the door and into stormsewer manholes located south of Building 125. Environmental Health and Safety was notified of the release and responded by 11:35PM and investigated the stormwater outflow to the City stormsewer. The release was not observed at the

Rodney Kern
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Fort Dodge, Iowa 50501
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Boehringer Ingelheim

onsite stormwater outflow to the City stormsewer. On 02Aug12, at 12:35 AM a visit to the City stormwater outfall at the River did not show visual signs of the release, but a slight chemical smell was noticed. At approximately 8:00 AM on 02 August 2012, a visual observation of the City stormwater outfall at the River did not show any signs of the release. At approximately 11:30AM a visit by Scott Wilson of the IDNR Field office #2 was conducted at the City storm water outfall at the River and no effect of the release was observed. An investigation of why the valve failed is currently being conducted between the contractor who installed the failed valve ACI Mechanical Inc. and Boehringer Ingelheim Vetmedica Inc. facility engineers. As part of the corrective action, visual inspections of similar recently installed valves were completed and no evidence of any issues was discovered. (See attached investigation letter).

As you know, Propylene Glycol is not on EPA's Consolidated List of Chemicals Subject to the Emergency Planning and Community Right-to-Know Act (EPCRA) and Section 112(r) of the Clean Air Act and is not subject to reporting under EPCRA. Furthermore, there is not a reportable quantity release amount associated with this chemical. We have attached a copy of the Dowfrost MSDS for your convenience.

Please contact me if you have any questions or additional requirements.

Best regards,

Rodney C. Kern

cc: Dr. Albrecht Kissel
Dr. Bernd Eichenmueller
R. Michael Herrman
Scott Davis

Attach: MSDS Dowfrost
Investigation Letter

ACI Mechanical, Inc. • 3116 S. Duff Avenue • P.O. Box 192 • Ames, Iowa 50010-0192
515/232-1236 • FAX 515/232-0136 • e-mail: aci@acimech.com

MECHANICAL
Contractors and Engineers

Benefit From Our Experience

August 15, 2012

Boehringer Ingelheim Vetmedica, Inc.
Symon Olenczuk
800 5th Street
Fort Dodge, Iowa 50501

Re: AHU 125-2 Armstrong CBV Fracture

Dear Mr. Olenczuk,

This letter is being written to address our reaction to the fractured 4" Armstrong CBV valve on AHU 125-2. The valve is currently in the possession of our insurance carrier, Travelers Insurance. The time frame for their analysis is unknown. However, we do know the following:

1. Neither BIVI, nor ACI, believe there was an installation error that caused the failure.
2. Neither BIVI, nor ACI, is aware of any system pressure shocks that caused the failure.
3. We have performed a visual inspection of several previously installed 4" Armstrong CBV valves and saw nothing externally that would alarm us to a defective production run of valves.

Sincerely,

Kent Meyn
Project Manager
ACI Mechanical, Inc.

CC: Laura Sundine, ACI Mechanical, Inc.

Material Safety Data Sheet
The Dow Chemical Company

Product Name: DOWFROST* Heat Transfer Fluid

Issue Date: 10/05/2010
Print Date: 12 Apr 2011

The Dow Chemical Company encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. Product and Company Identification

Product Name
DOWFROST* Heat Transfer Fluid

COMPANY IDENTIFICATION
The Dow Chemical Company
2030 Willard H. Dow Center
Midland, MI 48674
USA

Customer Information Number: 800-258-2436

EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: 989-636-4400
Local Emergency Contact: 989-636-4400

2. Hazards Identification

Emergency Overview
Color: Colorless
Physical State: Liquid.
Odor: Characteristic
Hazards of product:

No significant immediate hazards for emergency response are known.

OSHA Hazard Communication Standard
This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential Health Effects
Eye Contact: May cause slight temporary eye irritation. Corneal injury is unlikely.
Skin Contact: Prolonged contact is essentially nonirritating to skin. Repeated contact may cause flaking and softening of skin.
Skin Absorption: Prolonged skin contact is unlikely to result in absorption of harmful amounts.
Inhalation: At room temperature, exposure to vapor is minimal due to low volatility. Mist may cause irritation of upper respiratory tract (nose and throat).

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Ingestion: Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.
Aspiration hazard: Based on physical properties, not likely to be an aspiration hazard.
Effects of Repeated Exposure: In rare cases, repeated excessive exposure to propylene glycol may cause central nervous system effects.

3. Composition Information

Component	CAS #	Amount
Propylene glycol	57-55-6	> 95.0 %
Dipotassium hydrogen phosphate	7758-11-4	< 3.0 %
Deionized water	7732-18-5	< 3.0 %

4. First-aid measures

Eye Contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.
Skin Contact: Wash skin with plenty of water.
Inhalation: Move person to fresh air; if effects occur, consult a physician.
Ingestion: No emergency medical treatment necessary.
Notes to Physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.
Emergency Personnel Protection: If potential for exposure exists refer to Section 8 for specific personal protective equipment.

5. Fire Fighting Measures

Extinguishing Media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Do not use direct water stream. May spread fire. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.
Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.
Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.
Unusual Fire and Explosion Hazards: Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.
Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.

6. Accidental Release Measures

Steps to be Taken if Material is Released or Spilled: Small spills: Absorb with materials such as: Cat litter. Sawdust. Vermiculite. Zorb-all®. Collect in suitable and properly labeled containers. Large spills: Dike area to contain spill. Recover spilled material if possible. See Section 13, Disposal Considerations, for additional information.
Personal Precautions: Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.
Environmental Precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

7. Handling and Storage

Handling
General Handling: No special precautions required. Keep container closed. Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Storage
Do not store in: Galvanized steel. Opened or unlabeled containers. Store in original unopened container. See Section 10 for more specific information. Additional storage and handling information on this product may be obtained by calling your sales or customer service contact.

8. Exposure Controls / Personal Protection

Exposure Limits

Component	List	Type	Value
Propylene glycol	WEEL	TWA Aerosol.	10 mg/m3

Personal Protection
Eye/Face Protection: Use safety glasses (with side shields).
Skin Protection: Wear clean, body-covering clothing.

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl alcohol ("PVA"). Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Respiratory Protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. In misty atmospheres, use an approved particulate respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.
Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Engineering Controls

Ventilation: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

9. Physical and Chemical Properties

Physical State	Liquid.
Color	Colorless
Odor	Characteristic
Odor Threshold	No test data available
Flash Point - Closed Cup	104 °C (219 °F) *Pensky-Martens Closed Cup ASTM D 93* (based on major component), Propylene glycol.
Flammability (solid, gas)	Not applicable to liquids
Flammable Limits In Air	**Lower**: 2.6 %(V) *Literature* Propylene glycol. **Upper**: 12.5 %(V) *Literature* Propylene glycol.
Autoignition Temperature	371 °C (700 °F) *Literature* Propylene glycol.
Vapor Pressure	2.2 mmHg *Literature*
Boiling Point (760 mmHg)	152 °C (306 °F) *Literature* .
Vapor Density (air = 1)	>1.0 *Literature*
Specific Gravity (H2O = 1)	1.05 20 °C/20 °C *Literature*
Freezing Point	supercools
Melting Point	Not applicable to liquids
Solubility in water (by weight)	100 % *Literature*
pH	10.0 (@ 50 %) *Literature*
Molecular Weight	76.9 g/mol *Literature*
Decomposition Temperature	No test data available
Partition coefficient, n-octanol/water (log Pow)	No test data available
Evaporation Rate (Butyl Acetate = 1)	<0.5 *Estimated.*
Kinematic Viscosity	43.4 cSt @ 20 °C *Literature*

10. Stability and Reactivity

Stability/Instability

Stable under recommended storage conditions. See Storage, Section 7. Hygroscopic.
Conditions to Avoid: Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems. Avoid direct sunlight or ultraviolet sources.

Incompatible Materials: Avoid contact with: Strong acids. Strong bases. Strong oxidizers.

Hazardous Polymerization

Will not occur.

Thermal Decomposition

Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Aldehydes. Alcohols. Ethers. Organic acids.

11. Toxicological Information

Acute Toxicity
Ingestion
For the major component(s): Propylene glycol. LD50, Rat > 20,000 mg/kg
Dermal
For the major component(s): Propylene glycol. LD50, Rabbit > 20,000 mg/kg
Inhalation
For the major component(s): No deaths occurred following exposure to a saturated atmosphere. LC50, 8 h, Vapor, Rat 4.1 mg/l

Eye damage/eye irritation
May cause slight temporary eye irritation. Corneal injury is unlikely.

Skin corrosion/irritation
Prolonged contact is essentially nonirritating to skin. Repeated contact may cause flaking and softening of skin.

Sensitization
Skin
For the major component(s): Did not cause allergic skin reactions when tested in humans.
Respiratory
No relevant information found.

Repeated Dose Toxicity
In rare cases, repeated excessive exposure to propylene glycol may cause central nervous system effects.

Chronic Toxicity and Carcinogenicity
Similar formulations did not cause cancer in laboratory animals.

Developmental Toxicity
For the major component(s): Did not cause birth defects or any other fetal effects in laboratory animals.

Reproductive Toxicity
For the major component(s): In animal studies, did not interfere with reproduction. In animal studies, did not interfere with fertility.

Genetic Toxicology
In vitro genetic toxicity studies were negative. For the major component(s): Animal genetic toxicity studies were negative.

12. Ecological Information

ENVIRONMENTAL FATE

Movement & Partitioning
For the major component(s): Bioconcentration potential is low (BCF less than 100 or log Pow less than 3). Potential for mobility in soil is very high (Koc between 0 and 50).

Persistence and Degradability
For the major component(s): Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

ECOTOXICITY
For the major component(s): Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

13. Disposal Considerations

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler. Reclaimer. Incinerator or other thermal destruction device.

14. Transport Information

DOT Non-Bulk
NOT REGULATED

DOT Bulk
NOT REGULATED

IMDG
NOT REGULATED

ICAO/IATA
NOT REGULATED

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. Regulatory Information

OSHA Hazard Communication Standard
This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard	No
Delayed (Chronic) Health Hazard	No
Fire Hazard	No
Reactive Hazard	No
Sudden Release of Pressure Hazard	No

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313
To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:
The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Component	CAS #	Amount
Propylene glycol	57-55-6	> 95.0 %

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:
To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)
This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

Toxic Substances Control Act (TSCA)
All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30
CEPA - Domestic Substances List (DSL)
All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

16. Other Information

Hazard Rating System

NFPA	Health	Fire	Reactivity
	0	1	0

Recommended Uses and Restrictions

Intended as a heat transfer fluid for closed-loop systems. This product is acceptable for use where there is possibility of incidental food contact and as a product for use in the immersion or spray freezing of wrapped meat and packaged poultry products. We recommend that you use this product in a manner consistent with the listed use. If your intended use is not consistent with the stated use, please contact your sales or technical service representative.

Revision

Identification Number: 1376 / 0000 / Issue Date 10/05/2010 / Version: 4.0
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG	Dow Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ_DES	Hazard Designation
Action Level	A value set by OSHA that is lower than the PEL which will trigger the need for activities such as exposure monitoring and medical surveillance if exceeded.

The Dow Chemical Company urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to

the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.