



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue SE
Washington, DC 20590

SEP 30 2015

Paul Dambek
Hazmateam, Inc.
12 Kimball Hill Road
Hudson, NH 03051-3915

Ref. No.: 15-0122

Dear Mr. Dambek:

This is a response to your June 15, 2015 letter requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) applicable to the classification of an aerosol that may meet the definition of a poisonous material (Division 6.1) as a subsidiary hazard. In your letter, you state that you have an aerosol mixture that consists of six individual components of varying percentages (toluene 20-35%, silver 15-25%, dichloromethane 15-25%, propane 10-20%, isobutane 10-15%, and asbestos free talc 1-3%) and varying LC₅₀ and LD₅₀ values.

According to the information in your letter and the safety data sheet (SDS) you provided, you have identified your material as CHO-SHIELD® 4900, manufactured by Parker Hannifin Corporation with an SDS number of PHC-205 and product codes of: 52-01-4900-0000; 52-02-4900-0000; 52-02-4900-0000E; 52-03-4900-0000. Further, the SDS indicates that the material has been classified as "UN1950, Aerosols, 2.1 (6.1)" when offered for transportation under the HMR, and "UN1950, Aerosols, flammable, containing substances in Division 6.1, Packing Group III, 2.1 (6.1)" when offered for transportation under the International Civil Aviation Organization's Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO TI). You question the accuracy of the aerosol mixture CHO-SHIELD® 4900 being classified as having a subsidiary hazard of poisonous material (Division 6.1), and therefore, disagree with the manufacturer's classification of this material. Your questions are paraphrased and answered as follows:

- Q1. Based on the LC₅₀ and LD₅₀ values of the six individual components listed in the SDS, does the aerosol mixture CHO-SHIELD® 4900 meet the definition of a poisonous material (Division 6.1) as a subsidiary hazard based on 49 CFR § 173.132(a)(1)?
- A1. In accordance with § 173.22, it is the shipper's responsibility to ensure that the material is properly classed and described in accordance with the HMR. We cannot make this determination based on the information you provided. Please work with Parker Hannifin Corporation to review its determination of what the LC₅₀ and LD₅₀ values are for the final aerosol mixture CHO-SHIELD® 4900.

A poisonous material (Division 6.1), as defined in § 173.132 means (**emphasis added**) a material, other than a gas, **which is known to be so toxic to humans as to afford a hazard to health during transportation, or which**, in the absence of adequate data on human toxicity:

(1) Is presumed to be toxic to humans because it falls within any one of the following categories when tested on laboratory animals (whenever possible, animal test data that has been reported in the chemical literature should be used):

(i) *Oral Toxicity*. A liquid or solid with an LD₅₀ for acute oral toxicity of not more than 300 mg/kg.

(ii) *Dermal Toxicity*. A material with an LD₅₀ for acute dermal toxicity of not more than 1000 mg/kg.

(iii) *Inhalation Toxicity*. (A) A dust or mist with an LC₅₀ for acute toxicity on inhalation of not more than 4 mg/L; or (B) A material with a saturated vapor concentration in air at 20 °C (68 °F) greater than or equal to one-fifth of the LC₅₀ for acute toxicity on inhalation of vapors and with an LC₅₀ for acute toxicity on inhalation of vapors of not more than 5000 mL/m³.

If the final aerosol mixture meets either of these criteria, it meets the definition of a Division 6.1 material.

Q2. The criteria described in 49 CFR § 173.132(a)(2) is somewhat subjective: "... is an irritating material, with properties similar to tear gas, which causes extreme irritation, especially in confined spaces." Given that the aerosol only contains 25% (maximum) of dichloromethane in small (6 fluid ounce) cans, and there is no (+) sign listed in column (1) of the § 172.101 Hazardous Materials Table (HMT) for dichloromethane, does CHO-SHIELD® 4900 meet the definition of a poisonous material (Division 6.1) as a subsidiary hazard based on 49 CFR § 173.132(a)(2)?

A2. This Office cannot determine the answer to this question. Please see A1.

Q3. Do you agree that the shipping description for CHO-SHIELD® 4900 should be "UN1950, Aerosols, 2.1" for all modes of transportation under both the HMR and the ICAO TI?

A3. This Office cannot determine the answer to this question. Please see A1.

I hope this information is helpful. If you have any more questions, please do not hesitate to contact this office.

Sincerely,



T. Glenn Foster
Chief, Regulatory Review and Reinvention Branch
Standards and Rulemaking Division

Nickels
§173.132
Definitions
15-0122

HAZMATEAM



12 Kimball Hill Road
Hudson, NH 03051-3915
Telephone: (603) 882-1112
Fax: (603) 882-6512
Web site: www.hazmateam.com

June 15, 2015

Mr. Charles Betts
Office of Hazardous Materials Standards
Pipeline and Hazardous Materials Safety Administration
Attn: PHH-10
U.S. Department of Transportation
1200 New Jersey Avenue, SE.
East Building, 2nd Floor
Washington, DC 20590-0001

Dear Mr. Betts:

I am requesting a letter of interpretation on classification of an aerosol that contains Dichloromethane. This aerosol is currently **conservatively** classified as having a Division 6.1 subsidiary hazard and we are reconsidering this classification. Before my specific questions, please consider the following aerosol formula (and corresponding acute toxicity data):

Chemical	%	INH RAT, LC50, 4HR	ORAL RAT, LD50	DERMAL RABBIT, LD50
Toluene	20-35	7585 ppm (28.1 mg/L) (vapor)	5580 mg/kg	12125 mg/kg
Silver	15-25	N/Av	> 2000 mg/kg	> 2000 mg/kg
Dichloromethane	15-25	22170 ppm (77.01 mg/L)(vapor)	1400 mg/kg	> 2000 mg/kg
Propane	10-20	N/Av	N/Ap (gas)	N/Ap (gas)
Isobutane	10-15	368000 ppm (mouse)	N/Ap (gas)	N/Ap (gas)
Talc (asbestos free)	1-3	N/Av	N/Av	N/Av

N/Av = not available; N/Ap = not applicable; Ref: Cho-Shield 4900 SDS, attached

Next, consider the Division 6.1 classification criteria:

§173.132 Class 6, Division 6.1—Definitions.

(a) For the purpose of this subchapter, *poisonous material* (Division 6.1) means a material, other than a gas, which is known to be so toxic to humans as to afford a hazard to health during transportation, or which, in the absence of adequate data on human toxicity:

(1) Is presumed to be toxic to humans because it falls within any one of the following categories when tested on laboratory animals (whenever possible, animal test data that has been reported in the chemical literature should be used):

(i) *Oral Toxicity.* A liquid or solid with an LD₅₀ for acute oral toxicity of not more than 300 mg/kg.

(ii) *Dermal Toxicity.* A material with an LD₅₀ for acute dermal toxicity of not more than 1000 mg/kg.

(iii) *Inhalation Toxicity.* (A) A dust or mist with an LC₅₀ for acute toxicity on inhalation of not more than 4 mg/L; or

(B) A material with a saturated vapor concentration in air at 20 °C (68 °F) greater than or equal to one-fifth of the LC₅₀ for acute toxicity on inhalation of vapors and with an LC₅₀ for acute toxicity on inhalation of vapors of not more than 5000 mL/m³; or

(2) Is an irritating material, with properties similar to tear gas, which causes extreme irritation, especially in confined spaces.

Question 1.

Each component of the formula has a LC50 or LD50 above the respective regulatory threshold described in 49 CFR 173.132 (a).

Do you agree that based on the lowest LD50 and LC50 for any of the components above, the material would not be classified as Division 6.1?

- Each component's oral and dermal LD50 values are well above 300 mg/kg & 1000 mg/kg, respectively.
- The vapor LC50 for toluene, dichloromethane and isobutane are all well above 5000 ml/M3, the criteria for 173.132 (a)(1)(B).

Question 2.

The criteria described in 49 CFR 173.132 (a)(2) is somewhat subjective: “... ***is an irritating material, with properties similar to tear gas, which causes extreme irritation...***”.

Dichloromethane, the only component in the formulation classified as a Division 6.1 material is diluted to a maximum of 25% in the formula. Each aerosol can is 6 fluid ounces. We believe the diluted Dichloromethane in such a small receptacle would not cause extreme irritation.

Given that this formula only contains 25% (max) of dichloromethane in small (6 fluid ounce) cans, and there is no (+) sign listed in column (1) of the 172.101 table for Dichloromethane, do you agree that this formula would not be classified as a Division 6.1 material based on 49 CFR 173.132 (a)(2)?

Question 3.

If you agree with our conclusions described in Questions 1 and 2, do you agree the shipping description for this aerosol formula should be:

UN 1950, Aerosols, 2.1 for all modes of transportation.

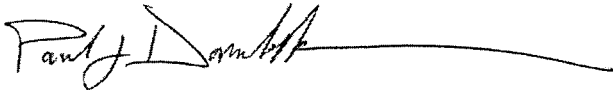
Rather than:

UN 1950, Aerosols, 2.1 (6.1) – 49 CFR

UN 1950, Aerosols, Flammable, Containing Substances in Division 6.1, Packing Group III, 2.1(6.1) - IATA

The Safety Data Sheet for this material is attached. If you have questions, do not hesitate to send e-mail to paul@hazmateam.com or call 401-595-8395. Your assistance is greatly appreciated.

Sincerely,

A handwritten signature in black ink, appearing to read "Paul Dambek", followed by a long horizontal line extending to the right.

Paul Dambek, CDGP

Hazardous Materials Trainer and Consultant

SAFETY DATA SHEET



1. Identification

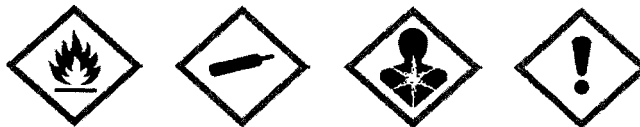
Product identifier	CHO-SHIELD® 4900
Other means of identification	
SDS number	PHC-205
Product code	52-01-4900-0000; 52-02-4900-0000; 52-02-4900-0000E; 52-03-4900-0000
Recommended use	Conductive, silver-filled acrylic coating.
Recommended restrictions	No restrictions on use known.
Chemical family	Mixture.
Manufacturer	
Company name	Parker Hannifin Corp.
Address	Chomerics Division 77 Dragon Court Woburn, MA, USA 01888
Telephone	(781) 935 4580
Website	www.chomerics.com
E-Mail	chomailbox@parker.com
Supplier information	Refer to Manufacturer
Emergency phone number	INFOTRAC - (800) 535-5053 (Within Continental US); (352) 323-3500 (Outside US)

2. Hazard(s) Identification

This material is classified as hazardous under OSHA regulations (29CFR 1910.1200) (Hazcom 2012).

Physical hazards	Flammable aerosol - Category 1 Gases under pressure
Health hazards	Skin corrosion/irritation - Category 2 Eye damage/irritation - Category 2A Carcinogenicity - Category 2 Reproductive toxicity - Category 2 Specific target organ toxicity - single exposure - Category 3 (Respiratory irritation; Narcotic effects) Specific target organ toxicity - repeated exposure - Category 2
Environmental hazards	Not currently regulated by OSHA, refer to Section 12 for additional information.
OSHA defined hazards	This mixture does not meet the classification criteria according to OSHA Hazcom 2012.

Label elements



Signal Word	DANGER!
Hazard statement(s)	Extremely flammable aerosol. Contains gas under pressure; may explode if heated. Causes skin irritation. Causes serious eye irritation. Suspected of causing cancer. Suspected of damaging the unborn child. May cause respiratory irritation. May cause drowsiness and dizziness. May cause damage to organs through prolonged or repeated exposure.



SAFETY DATA SHEET

Precautionary statement(s)

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, sparks and open flame. -No smoking. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. Do not breathe mist or vapors. Wash hands and face thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/clothing and eye/face protection.

Response

IF exposed or concerned: Get medical attention/advice.
IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs, get medical advice/attention. Take off contaminated clothing and wash before re-use.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.

Storage

Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.

Disposal

Dispose of contents/container in accordance with local regulation.

Hazard(s) not otherwise Classified (HNOC)

No OSHA defined hazard classes.
Other hazards which do not result in classification:
Toxic fumes, gases or vapors may evolve on burning. Inhalation of fumes may result in metal fume fever, a flu-like illness. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Prolonged overexposure may cause slight kidney effects, such as increased organ weight. Silver in the form of a finely divided dust may cause discoloration in contact with skin, and argyrosis in case of inhalation.

Supplemental Information

Avoid contact with eyes, skin and clothing. Keep away from incompatibles.

3. Composition/information on ingredients

Mixture

Chemical name	Common name and synonyms	CAS number	Concentration (%)
Toluene	Methylbenzene Phenylmethane	108-88-3	20.0 - 35.0
Silver	Silver metal Argentum	7440-22-4	15.0 - 25.0
Methylene chloride	Dichloromethane DCM	75-09-2	15.0 - 25.0
Propane	Dimethylmethane Propyl hydride	74-98-6	10.0 - 20.0
Isobutane	2-Methylpropane Trimethylmethane	75-28-5	10.0 - 15.0
Talc (containing no asbestos fibers)	Hydrous magnesium silicate Soapstone Talcum	14807-96-6	1.0 - 3.0

The exact concentrations of the above listed chemicals are being withheld as a trade secret.

4. First-aid measures

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing. If breathing is difficult, give oxygen by qualified medical personnel only. If breathing stopped, begin artificial respiration. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin contact

IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs, get medical advice/attention. Take off contaminated clothing and wash it before reuse.

Eye contact

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.

Ingestion

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.

SAFETY DATA SHEET



Most important symptoms and effects, both acute and delayed

Causes skin irritation. Contact may cause redness, swelling and a painful sensation.
Causes serious eye irritation. Symptoms may include redness, pain, tearing and conjunctivitis.
Suspected of causing cancer. Symptoms may include persistent coughing, shortness of breath, coughing up blood and wheezing.
Suspected of damaging the unborn child. Symptoms in offspring may include reduced fetal weight, behavioral effects, delayed skeletal formation and hearing loss.
May cause respiratory irritation. Symptoms may include upper respiratory irritation, coughing and breathing difficulties.
May cause drowsiness or dizziness. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects.
May cause damage to the liver, nervous system or lungs through prolonged or repeated exposure. Symptoms may include memory loss, sleep disturbances, incoordination or loss of ability to concentrate. Additional symptoms may include liver damage and emphysema.
Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Inhalation of fumes may result in metal fume fever, a flu-like illness. Symptoms of metal fume fever may include fever, fatigue, vomiting, muscle aches and shortness of breath.
Silver in the form of a finely divided dust may cause discoloration in contact with skin, and argyrosis in case of inhalation.
Prolonged overexposure may cause slight kidney effects, such as increased organ weight.

Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically.

General Information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media

Carbon dioxide (CO₂); Dry chemical; Alcohol-resistant foam; water fog .

Unsuitable extinguishing media

Do not use a solid water stream as it may scatter and spread fire.

Specific hazards arising from the chemical

Vapours are heavier than air and may spread along floors. Product may float, and be re-ignited at the water's surface. This product is contained under pressure, and could explode when exposed to heat and flame.

Special protective equipment and precautions for fire-fighters

Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode.

Fire-fighting equipment/instructions

Move containers from fire area if safe to do so. Cool closed containers exposed to fire with water spray. Shield personnel to protect from venting or rupturing containers. Do not allow run-off from fire fighting to enter drains or water courses. Dike for water control.

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards

Flammable aerosol. This material may be ignited by heat, sparks and direct flame.

Hazardous combustion products

Carbon oxides; Chlorine; Phosgene; Hydrogen chloride gas; Reactive hydrocarbons; Aldehydes; Metal oxides; Other unidentified organic compounds.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep people away from and upwind of spill/leak. Restrict access to area until completion of clean-up. Wear appropriate protective equipment. Refer to protective measures listed in sections 7 and 8.



SAFETY DATA SHEET

Methods and materials for containment and cleaning up

Ventilate the area. Remove all sources of ignition. Prevent further leakage or spillage if safe to do so. Use only non-sparking tools. For spilled liquids: absorb spill with inert, non-combustible material such as sand, then place into suitable containers. Do not use combustible absorbents, such as sawdust. Pick up and transfer to properly labelled containers. Contaminated absorbent material may pose the same hazards as the spilled product. Contact the proper local authorities.

Environmental precautions

Prevent product from entering drains, sewers, waterways and soil.

7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

Use only outdoors or in a well-ventilated area. Wear suitable protective equipment during handling. Wear protective gloves/clothing and eye/face protection. Do not breathe vapours or spray mist. Avoid contact with skin, eyes and clothing. Keep away from heat, sparks and open flame. - No smoking. Do not spray on an open flame or other ignition source.

Pressurized container: Do not pierce or burn, even after use. Keep away from incompatibles. Always replace cap after use. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Store in cool/well-ventilated place. Store locked up. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking. Have appropriate fire extinguishers and spill clean-up equipment in or near storage area. Protect from sunlight and do not expose to temperatures exceeding 50 °C/122 °F. Do not store near any incompatible materials (see Section 10).

8. Exposure controls/personal protection

Occupational exposure limits

U.S. OSHA Exposure Limits (29 CFR 1910)

	Type	Value
Toluene (CAS 108-88-3)	TWA	200 ppm
Silver (CAS 7440-22-4)	TWA	0.01 mg/m ³
Methylene chloride (CAS 75-09-2)	STEL	125 ppm
	TWA	25 ppm
Propane (CAS 74-98-6)	TWA	1000 ppm (1800 mg/m ³)
Talc (containing no asbestos fibers) (CAS 14807-96-6)	TWA	20 mppcf

US. ACGIH Threshold Limit Values

	Type	Value
Toluene (CAS 108-88-3)	TWA	20 ppm
Silver (CAS 7440-22-4)	TWA	0.1 mg/m ³ (dust and fume)
Methylene chloride (CAS 75-09-2)	TWA	50 ppm
Isobutane (CAS 75-28-5)	TWA	1000 ppm (as 'Butane, all isomers')
Talc (containing no asbestos fibers) (CAS 14807-96-6)	TWA	2 mg/m ³ (respirable)



SAFETY DATA SHEET

US. NIOSH: Pocket Guide to Chemical Hazards

	Type	Value
Toluene (CAS 108-88-3)	STEL	150 ppm (560 mg/m ³)
	TWA	100 ppm (375 mg/m ³)
Silver (CAS 7440-22-4)	TWA	0.01 mg/m ³ (dust)
Propane (CAS 74-98-6)	TWA	1000 ppm (1800 mg/m ³)
Isobutane (CAS 75-28-5)	TWA	800 ppm (1900 mg/m ³)
Talc (containing no asbestos fibers) (CAS 14807-96-6)	TWA	2 mg/m ³ (respirable dust)

Biological limit values

Toluene	(CAS 108-88-3)	0.02 mg/L; Medium: Blood; Parameter: Toluene 0.03 mg/L; Medium: Urine; Parameter: Toluene 0.3 mg/g Creatinine; Medium: Urine; Parameter: o-Cresol with hydrolysis
Methylene chloride	(CAS 75-09-2)	0.3 mg/L; Medium: Urine; Parameter: Dichloromethane (semi-quantitative)

Appropriate engineering controls

Use only outdoors or in a well-ventilated area. Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. In case of insufficient ventilation wear suitable respiratory equipment.

Individual protection measures, such as personal protective equipment

Eye / face protection

Wear eye/face protection. Wear as appropriate: Tightly fitting safety goggles; Safety glasses with side-shields. A full face shield may also be necessary.

Skin protection

Hand protection

Wear protective gloves/clothing. The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Other

Ensure that eyewash stations and safety showers are close to the workstation location. Other equipment may be required depending on workplace standards.

Respiratory protection

If airbourne concentrations are above the permissible exposure limit or are not known, use NIOSH-approved respirators. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02. Advice should be sought from respiratory protection specialists.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Do not breathe vapors or spray mist. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Remove and wash contaminated clothing before re-use. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance

Physical state

Liquid aerosol.

Form

Silver liquid contained in pressurized aerosol can.

Color

silver

Odor

Solvent odor.

Odor threshold

N/Av

pH

N/Av

Melting point /freezing point

N/Av

Initial boiling point and boiling range

N/Av

Flash point

4°C (39°F) (concentrate) (based on ingredients)
closed cup

Evaporation rate

N/Av

SAFETY DATA SHEET



Flammability (solid, gas)	Not applicable.
Lower flammability/explosive limit	N/Av
Upper flammability/explosive limit	N/Av
Vapor pressure	N/Av
Vapor density	> 1 (Air = 1)
Relative density	> 1
Solubility(ies)	
Other solubility(ies)	N/Av
Solubility (water)	Insoluble.
Partition coefficient (n-octanol/water)	N/Av
Auto-ignition temperature	N/Av
Decomposition temperature	N/Av
Viscosity	N/Av
Other information	
Explosive properties	Aerosols are sensitive to mechanical impact. Closed containers are contained under pressure and may explode if exposed to excess heat for a prolonged period of time.
Oxidizing properties	None known.
Specific gravity	> 1
Critical temperature	N/Av
VOC	N/Av
Volatilities %	73% (approximately)
Flame projection length	N/Av
Flashback observed	N/Av
Absolute pressure of container	N/Av
Other physical/chemical data	Chemical heat of combustion: N/Av

10. Stability and reactivity

Reactivity	Not normally reactive.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Direct sources of heat. Do not use in areas without adequate ventilation. Avoid contact with incompatible materials. Protect from sunlight and do not expose to temperatures exceeding 50 °C/122 °F.
Incompatible materials	Strong oxidizing agents; Strong acids; Strong bases; Reducing agents; Alkali metals .
Hazardous decomposition products	None known, refer to hazardous combustion products in Section 5.

11. Toxicological information

Information on likely routes of exposure

Routes of entry inhalation	May cause irritation of the nose, throat, mucous membranes, and respiratory tract.
Routes of entry skin & eye	Causes skin irritation. Causes serious eye irritation.
Routes of entry Ingestion	May cause gastrointestinal irritation.



SAFETY DATA SHEET

Routes of exposure skin absorption

May be absorbed through the skin.

Most important symptoms/effects, acute and delayed

May cause respiratory irritation. May cause coughing and breathing difficulties. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects.

Causes skin irritation. Contact may cause redness, swelling and a painful sensation. Causes serious eye irritation. Symptoms may include redness, pain, tearing and conjunctivitis.

Suspected of causing cancer. Symptoms may include persistent coughing, shortness of breath, coughing up blood and wheezing.

Suspected of damaging the unborn child. Symptoms in offspring may include reduced fetal weight, behavioral effects, delayed skeletal formation and hearing loss.

May cause respiratory irritation. Symptoms may include upper respiratory irritation, coughing and breathing difficulties.

May cause drowsiness or dizziness. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects.

May cause damage to the liver, nervous system or lungs through prolonged or repeated exposure. Symptoms may include memory loss, sleep disturbances, incoordination or loss of ability to concentrate. Additional symptoms may include liver damage and emphysema.

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Inhalation of fumes may result in metal fume fever, a flu-like illness. Symptoms of metal fume fever may include fever, fatigue, vomiting, muscle aches and shortness of breath.

Silver in the form of a finely divided dust may cause discoloration in contact with skin, and argyrosis in case of inhalation.

Prolonged overexposure may cause slight kidney effects, such as increased organ weight.

Information on toxicological effects

Acute toxicity

Not expected to be hazardous by OSHA criteria.

The calculated ATE values for this mixture are:
ATE oral = 7000 mg/kg

See below for toxicological data on the substance.

Chemical name	LC ₅₀ (4hr)	LD ₅₀	
	<u>inh. rat</u>	<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Toluene	7585 ppm (28.1 mg/L) (vapor)	5580 mg/kg	12 125 mg/kg
Silver	N/Av	> 2000 mg/kg	> 2000 mg/kg
Methylene chloride	22 170 ppm (77.01 mg/L) (vapor)	1400 mg/kg	> 2000 mg/kg
Propane	N/Av	N/Av (gas)	N/Av (gas)
Isobutane	368 000 ppm (mouse)	N/Av (gas)	N/Av (gas)
Talc (containing no asbestos fibers)	N/Av	N/Av	N/Av

Skin Corrosion/Irritation

Hazardous by OSHA criteria. Classification:
Skin corrosion/irritation - Category 2. Causes skin irritation.

Serious eye damage/Irritation

Hazardous by OSHA criteria. Classification:
Eye damage/irritation - Category 2A. Causes serious eye irritation.

Respiratory or skin sensitization

No data available to indicate product or components may be respiratory sensitizers.
No data available to indicate product or components may be skin sensitizers.

Germ cell mutagenicity

No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.



SAFETY DATA SHEET

Carcinogenicity

This material is classified as hazardous under OSHA regulations (29CFR 1910.1200) (Hazcom 2012). Classification: Carcinogenicity - Category 2. Suspected of causing cancer. Contains: Methylene chloride. No other components are classified as carcinogenic by IARC, ACGIH, OSHA or NTP.

See below for ingredients present on regulatory lists.

IARC Monographs. Overall Evaluation of Carcinogenicity

Toluene(CAS 108-88-3)	Group 3 (Not Classifiable)
Methylene chloride(CAS 75-09-2)	Group 2A (Probably Carcinogenic to Humans)
Talc (containing no asbestos fibers)(CAS 14807-96-6)	Group 3 (Not Classifiable)

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Methylene chloride(CAS 75-09-2)	Present
---------------------------------	---------

US National Toxicology Program(NTP) Report on Carcinogens

Methylene chloride(CAS 75-09-2)	Group 2
---------------------------------	---------

Reproductive toxicity

This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Classification: Reproductive toxicant - Category 2. Suspected of damaging the unborn child. Contains Toluene. Toluene may cause fetotoxic effects at doses which are not maternally toxic, based on animal data.

Specific target organ toxicity - single exposure

Hazardous by OSHA criteria. Classification: Specific target organ toxicity - single exposure; Category 3. May cause respiratory irritation. May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure

Hazardous by OSHA criteria. Classification: Specific target organ toxicity - repeated exposure; Category 2. May cause damage to the liver, nervous system or lungs through prolonged or repeated exposure. Contains: Toluene; Methylene chloride; Talc (Mg3H2(SiO3)4).

Chronic effects

Prolonged overexposure may cause slight kidney effects, such as increased organ weight.

Aspiration toxicity

Not expected to be hazardous by OSHA criteria.

Further information

Silver in the form of a finely divided dust may cause discoloration in contact with skin, and argyrosis in case of inhalation.

12. Ecological information

Ecotoxicity

No data is available on the product itself. Should not be released into the environment. Contains: Silver. The acute toxicity of silver to aquatic species varies drastically by the chemical form and correlates with the availability of free ionic silver. Aquatic toxicity is highly variable not only by organism but with physical and chemical characteristics of the water itself.

See the following tables for individual ingredient ecotoxicity data.

Ecotoxicity data:

Ingredients	CAS No	Toxicity to Fish		
		LC50 / 96h	NOEC / 21 day	M Factor
Toluene	108-88-3	5.4 mg/L (pink salmon)	1.4 - 4 mg/L	None.
Methylene chloride	75-09-2	193 mg/L (Fathead minnow)	83 mg/L/28-day (Fathead minnow)	None.
Talc (containing no asbestos fibers)	14807-96-6	> 100 mg/L/24hr (Zebra fish)	N/Av	None.



SAFETY DATA SHEET

Ingredients	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
Toluene	108-88-3	3.78 mg/L (Water flea)	0.53 - 1 mg/L	None.
Methylene chloride	75-09-2	27 mg/L (Daphnia magna)	6.2 - 13.3 mg/L	None.
Talc (containing no asbestos fibers)	14807-96-6	N/Av	N/Av	None.

Ingredients	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Toluene	108-88-3	N/Av	10 mg/L/72hr (Green algae)	None.
Methylene chloride	75-09-2	662 mg/L/96hr (Green algae)	56 mg/L/96hr	None.
Talc (containing no asbestos fibers)	14807-96-6	N/Av	N/Av	None.

Persistence and degradability

The product itself has not been tested.
 The following ingredients are considered to be readily biodegradable: Toluene.
 Contains the following chemicals which are considered to be inherently biodegradable:
 Methylene chloride.
 Contains the following chemicals which are not readily biodegradable: Talc (Mg₃H₂(SiO₃)₄).

Bioaccumulation potential

The product itself has not been tested. See the following data for ingredient information.

Components	Partition coefficient n-octanol/ater (log Kow)	Bioconcentration factor (BCF)
Toluene (CAS 108-88-3)	2.65	90
Methylene chloride (CAS 75-09-2)	1.25	6.4 - 40
Talc (containing no asbestos fibers) (CAS 14807-96-6)	- 1.5 (estimated)	N/Av

Mobility in soil

The product itself has not been tested.

Other adverse effects

None known.

13. Disposal consideration

Disposal instructions

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of in accordance with local regulations.

Local disposal regulations

Dispose in accordance with all applicable federal, state, territory and local regulations.

Hazardous waste code

If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

US RCRA Hazardous Waste U List: Reference

Components	RCRA Waste Number
Toluene (CAS 108-88-3)	U220
Methylene chloride (CAS 75-09-2)	U080

SAFETY DATA SHEET



Waste from residues / unused products

Dispose of contents/container in accordance with local regulation. Empty containers should be disposed of in accordance with the requirements of the following legislation:

Contaminated packaging

Empty containers should be taken for local recycling or waste disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

49CFR/DOT



UN Number	UN1950
UN proper shipping name	Aerosols
Transport hazard class(es)	
Class	2.1
Subsidiary ris	6.1
Packaging group	None
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special Provisions	N82

ICAO/IATA



UN Number	UN1950
UN proper shipping name	Aerosols, flammable, containing substances in Division 6.1, Packing Group III
Transport hazard class(es)	
Class	2.1
Subsidiary ris	6.1
Packaging group	None
Environmental hazards	No
ERG Code	10P
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling. Refer to the appropriate Packing Instruction, prior to shipping this material. Review all State and Operator Variations, prior to shipping this material.
Special Provisions	
Other information	
Passenger and cargo aircraft	Allowed
Cargo aircraft only	Allowed

IMDG



UN Number	UN1950
------------------	--------

SAFETY DATA SHEET



UN proper shipping name	AEROSOLS
Transport hazard class(es)	
Class	2.1
Subsidiary ris	6.1
Packaging group	None
Environmental hazards	
Marine pollutant	No
EmS	F-D, S-U
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

General information Appropriate advice on safety must accompany the package. Keep away from heat, sparks and open flame. - No smoking.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

<u>Ingredients</u>	CAS #	TSCA Inventory	CERCLA Reportable Quantity(RQ) (40 CFR 117.302):	SARA TITLE III:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
				Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	Toxic Chemical	de minimus Concentration
Toluene	108-88-3	Yes	1000 lb/ 454 kg	None.	Yes	1%
Silver	7440-22-4	Yes	1000 lb final RQ/454 kg final RQ	None.	Yes	1%
Methylene chloride	75-09-2	Yes	1000 lb/ 454 kg	None.	Yes	0.1%
Propane	74-98-6	Yes	None.	None.	No	N/Ap
Isobutane	75-28-5	Yes	None.	None.	No	N/Ap
Talc (containing no asbestos fibers)	14807-96-6	Yes	None.	None.	No	N/Ap

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard -	Yes
	Delayed Hazard -	Yes
	Fire Hazard -	Yes
	Pressure Hazard -	Yes
	Reactivity Hazard -	NO

US state regulations

The following chemicals are specifically listed by individual States:

SAFETY DATA SHEET



Ingredients	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Toluene	108-88-3	No	Developmental	Yes	Yes	Yes	Yes	Yes	Yes
Silver	7440-22-4	No	N/Ap	Yes	Yes	Yes	Yes	Yes	Yes
Methylene chloride	75-09-2	Yes	Cancer	Yes	Yes	Yes	Yes	Yes	Yes
Propane	74-98-6	No	N/Ap	No	Yes	Yes	Yes	Yes	Yes
Isobutane	75-28-5	No	N/Ap	No	Yes	No	Yes	Yes	No
Talc (containing no asbestos fibers)	14807-96-6	No	N/Ap	Yes	Yes	Yes	Yes	Yes	Yes

Canadian Information:

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

International Inventories

Components listed below are present on the following International Inventory lists:

Ingredients	CAS #	European EINECS	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	New Zealand IOC
Toluene	108-88-3	203-625-9	Present	Present	(3)-2	KE-33936	Present	HSR001227
Silver	7440-22-4	231-131-3	Present	Present	Not listed	KE-31261	Present	HSR003077
Methylene chloride	75-09-2	200-838-9	Present	Present	(2)-36	KE-23893	Present	HSR001540
Propane	74-98-6	200-827-9	Present	Present	(2)-3	KE-29258	Present	HSR001010
Isobutane	75-28-5	200-857-2	Present	Present	(2)-4	KE-24865	Present	HSR001003
Talc (containing no asbestos fibers)	14807-96-6	238-877-9	Present	Present	(1)-468; (1)-468	KE-32773	Present	May be used as a single component chemical under an appropriate group standard

16. Other information, including date of preparation or last revision

Issue date 04/21/2015
Version # 1
Legend ACGIH: American Conference of Governmental Industrial Hygienists
 AICS: Australian Inventory of Chemical Substances
 CA: California
 CAS: Chemical Abstract Services
 CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
 CFR: Code of Federal Regulations
 CSA: Canadian Standards Association
 DOT: Department of Transportation
 EC50: Effective Concentration 50%.
 EINECS: European Inventory of Existing Commercial chemical Substances
 ENCS: Existing and New Chemical Substances
 EPA: Environmental Protection Agency
 HSDB: Hazardous Substances Data Bank
 IARC: International Agency for Research on Cancer
 IBC: Intermediate Bulk Container
 IECSC: Inventory of Existing Chemical Substances
 IMDG: International Maritime Dangerous Goods



SAFETY DATA SHEET

IOC: Inventory of Chemicals
KECI: Korean Existing Chemicals Inventory
KECL: Korean Existing Chemicals List
LC: Lethal Concentration
LD: Lethal Dose
MA: Massachusetts
MN: Minnesota
N/Ap: Not Applicable
N/Av: Not Available
NIOSH: National Institute of Occupational Safety and Health
NJ: New Jersey
NOEC: No observable effect concentration
NTP: National Toxicology Program
OECD: Organisation for Economic Co-operation and Development
OSHA: Occupational Safety and Health Administration
PA: Pennsylvania
PEL: Permissible exposure limit
PICCS: Philippine Inventory of Chemicals and Chemical Substances
RCRA: Resource Conservation and Recovery Act
RI: Rhode Island
RTECS: Registry of Toxic Effects of Chemical Substances
SARA: Superfund Amendments and Reauthorization Act
SDS: Safety Data Sheet
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TSCA: Toxic Substance Control Act
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

Other special considerations for handling

- : Provide adequate information, instruction and training for operators.

Disclaimer

Prepared by: ICC The Compliance Center Inc.
<http://www.thecompliancecenter.com>

This Safety Data Sheet was prepared by ICC The Compliance Center Inc. using information provided by Parker Hannifin Corporation and CCOHS' Web Information Service. The information in the Safety Data Sheet is offered for your consideration and guidance when exposed to this product. ICC The Compliance Center Inc and Parker Hannifin Corporation expressly disclaim all expressed or implied warranties and assume no responsibilities for the accuracy or completeness of the data contained herein. The data in this SDS does not apply to use with any other product or in any other process.

This Safety Data Sheet may not be changed, or altered in any way without the expressed knowledge and permission of ICC The Compliance Center Inc. and Parker Hannifin Corporation.

Bibliography

1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2014.
2. International Agency for Research on Cancer Monographs, searched 2015.
3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases, 2015 (Chempendium, HSDB and RTECs).
4. Material Safety Data Sheets from manufacturer.
5. US EPA Title III List of Lists - October 2012 version.
6. California Proposition 65 List - March 27, 2015 version.
7. OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2015.

Dodd, Alice (PHMSA)

From: Geller, Shelby CTR (PHMSA)
Sent: Thursday, June 18, 2015 4:00 PM
To: Hazmat Interps
Subject: FW: Request for Letter of Interpretation
Attachments: HAZMATEAM June 15 2015 Request for Interpretation.pdf

Dear Shante and Alice,

Forwarded is a request for a formal letter of interpretation.

Thanks,
Shelby

From: paul@hazmateam.com [<mailto:paul@hazmateam.com>]
Sent: Wednesday, June 17, 2015 5:12 PM
To: PHMSA HM InfoCenter
Cc: leo@hazmateam.com; SDeary@parker.com
Subject: Request for Letter of Interpretation

Dear PHMSA:

Please find attached a request for a letter of interpretation. Please send a receipt that is letter was received.

If you have questions, please send reply e-mail or call my cell, 401-595-8395.

Thank you,

HAZMATEAM, INC.

Paul Dambek, CDGP