Section 1 Identification

PRODUCT IDENTITY: Perma-Cast® Clear Liquid Release
PRODUCT USES: Release Agent

COMPANY IDENTITY: Butterfield Color®
COMPANY ADDRESS: 625 W Illinois Ave
COMPANY CITY: Aurora, IL 60506
COMPANY PHONE: 1-630-906-1980
EMERGENCY PHONES: CHEMTREC: 1-800-424-9300 (USA)
CANUTEC: 1-613-996-6666 (CANADA)

Section 2, Hazard(s) identification

Danger

2.1 HAZARD STATEMENTS: (CAT = Hazard Category)
H100s = General, H200s = Physical, H300s = Health, H400s = Environmental
H226 Flammable liquid & vapor.(CAT:3)
H304 May be fatal if swallowed and enters airways.(CAT:1)
H315 Causes skin irritation.(CAT:2)
H320 Causes eye irritation.(CAT:2)
H335 May cause respiratory irritation.(CAT:3)
H336 May cause drowsiness or dizziness.(CAT:3)
H402 Harmful to aquatic life.(CAT:3)

2.2 PRECAUTIONARY STATEMENTS:
P100s = General, P200s = Prevention, P300s = Response, P400s = Storage, P500s = Disposal
P264 Wash with soap & water thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P302+352 IF ON SKIN: Wash with soap & water.
P304+340 IF INHALED: Remove victim to fresh air & keep at rest in a position comfortable for breathing.
P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present & easy to do - Continue rinsing.
P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P331 Do NOT induce vomiting.
P332+313 If skin irritation occurs: Get medical advice/attention.
P337+313 If eye irritation persists, get medical advice/attention.
P361 Remove/Take off immediately all contaminated clothing.
P363 Wash contaminated clothing before reuse.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

SEE SECTIONS 8, 11 & 12 FOR TOXICOLOGICAL INFORMATION.

Section 3, Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>CAS#</th>
<th>EINECS#</th>
<th>WT %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odorless Mineral Spirits</td>
<td>64742-48-9</td>
<td>265-200-4</td>
<td>60-95</td>
</tr>
<tr>
<td>Nonhazardous Nonvolatile</td>
<td>Proprietary</td>
<td>-</td>
<td>0-30</td>
</tr>
</tbody>
</table>

TRACE COMPONENTS: Trace ingredients (if any) are present in < 1% concentration, (< 0.1% for potential carcinogens, reproductive toxins, respiratory tract mutagens, and sensitizers). None of the trace ingredients contribute significant additional hazards at the concentrations that may be present in this product. All pertinent hazard information has been provided in this document, per the requirements of the Federal Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalents, and Canadian Hazardous Materials Identification System Standard (CPR 4).

Section 4, First Aid Measures

4.1 MOST IMPORTANT SYMPTOMS/EFFECTS, ACUTE & DELAYED:
See Section 11 for symptoms/effects, acute & chronic.

4.2 EYE CONTACT:
For eyes, flush with plenty of water for 15 minutes & get medical attention.

4.4 SKIN CONTACT:
In case of contact with skin immediately remove contaminated clothing. Wash thoroughly with soap & water. Wash contaminated clothing before reuse.

4.5 INHALATION:
After high vapor exposure, remove to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, trained personnel should immediately begin artificial respiration. If the heart has stopped, trained personnel should immediately begin cardiopulmonary resuscitation (CPR).

4.6 SWALLOWING:
Rinse mouth. Do NOT induce vomiting. GET MEDICAL ATTENTION IMMEDIATELY.
Do NOT give liquids to an unconscious or convulsing person.

Section 5, Fire Fighting Measures

5.1 FIRE & EXPLOSION PREVENTIVE MEASURES:
NO open flames, NO sparks, & NO smoking. Above flash point, use a closed system, ventilation, explosion-proof electrical equipment, and lighting.

5.2 SUITABLE (& UNSUITABLE) EXTINGUISHING MEDIA:
Use dry powder, AFFF, carbon dioxide.
5.3 SPECIAL PROTECTIVE EQUIPMENT & PRECAUTIONS FOR FIRE FIGHTERS:
Water spray may be ineffective on fire but can protect fire-fighters & cool closed containers. Use fog nozzles if water is used. Do not enter confined fire-space without full bunker gear. (Helmet with face shield, bunker coats, gloves & rubber boots).

5.4 SPECIFIC HAZARDS OF CHEMICAL & HAZARDOUS COMBUSTION PRODUCTS:
FLAMMABLE!! VAPORS CAN CAUSE FLASH FIRE
Isolate from oxidizers, heat, & open flame. Closed containers may explode if exposed to extreme heat. Applying to hot surfaces requires special precautions. Empty container very hazardous! Continue all label precautions!

Section 6, Accidental Release Measures

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT, EMERGENCY PROCEDURES:
Keep unprotected personnel away. Ventilate spill area. Remove all ignition sources. Filter respirator for organic vapors.

6.2 ENVIRONMENTAL PRECAUTIONS:
Keep from entering storm sewers and ditches which lead to waterways.

6.3 METHODS AND MATERIAL FOR CONTAINMENT & CLEAN-UP:
Stop spill at source. Dike and contain. Absorb remaining liquid in sand or inert absorbent.

Section 7, Handling and Storage

7.1 PRECAUTIONS FOR SAFE HANDLING:
Isolate from oxidizers, heat, sparks, electric equipment & open flame. Use only with adequate ventilation. Avoid breathing of vapor or spray mist. Avoid prolonged or repeated contact with skin. Wear OSHA Standard goggles or face shield. Consult Safety Equipment Supplier. Wear goggles, face shield, gloves, apron & footwear impervious to material. Wash clothing before reuse. Avoid free fall of liquid. Ground containers when transferring. Do not flame cut, saw, drill, braze, or weld. Empty container very hazardous! Continue all label precautions!

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:
Isolate from strong oxidants. Keep container tightly closed & upright when not in use to prevent leakage.

7.3 NONBULK: CONTAINERS:
Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Material should be stored in secondary containers or in a diked area, as appropriate. Store containers away from incompatible chemicals (see Section 10, Stability and Reactivity). Post warning and "NO SMOKING" signs in storage and use areas, as appropriate. Empty containers should be handled with care. Never store food, feed, or drinking water in containers which held this product.

7.4 PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT:
Follow practices indicated in Section 6 (Accidental Release Measures). Make certain application equipment is locked and tagged-out safely. Always use this product in areas where adequate ventilation is provided. Collect all rinsates and dispose of according to applicable Federal, State, Provincial, or local procedures.

7.5 EMPTY CONTAINER WARNING:
Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations.

DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY BURST AND CAUSE INJURY OR DEATH.
Section 8, Exposure Controls / Personal Protective Equipment

8.1 EXPOSURE LIMITS:

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>CAS#</th>
<th>EINECS#</th>
<th>TWA (OSHA)</th>
<th>TLV (ACGIH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odorless Mineral Spirits</td>
<td>64742-48-9</td>
<td>265-200-4</td>
<td>500 ppm</td>
<td>100 ppm</td>
</tr>
<tr>
<td>Nonhazardous Nonvolatile</td>
<td>Proprietary</td>
<td>-</td>
<td>None Known</td>
<td>None Known</td>
</tr>
</tbody>
</table>

This product contains no EPA Hazardous Air Pollutants (HAP) in amounts > 0.1%.

8.2 APPROPRIATE ENGINEERING CONTROLS:

RESPIRATORY EXPOSURE CONTROLS

A respiratory protection program that meets OSHA 29 CFR 1910.134 and ANSI Z86.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

EMERGENCY OR PLANNED ENTRY INTO UNKNOWN CONCENTRATIONS OR IDLH CONDITIONS

Positive pressure, full-face piece Self-Contained Breathing Apparatus; or positive pressure, full-face piece Self-Contained Breathing Apparatus with an auxiliary positive pressure Self-Contained Breathing Apparatus.

VENTILATION

LOCAL EXHAUST: Necessary
MECHANICAL (GENERAL): Acceptable
SPECIAL: None
OTHER: None


8.3 INDIVIDUAL PROTECTION MEASURES, SUCH AS PERSONAL PROTECTIVE EQUIPMENT:

PERSONAL PROTECTIONS:

Wear OSHA Standard goggles or face shield. Consult Safety Equipment Supplier. Wear goggles, face shield, gloves, apron & footwear impervious to material. Wash clothing before reuse.

WORK & HYGIENIC PRACTICES:

Provide readily accessible eye wash stations & safety showers. Wash at end of each shift & before eating, smoking or using the toilet. Promptly remove clothing that becomes contaminated. Destroy contaminated leather articles. Launder or discard contaminated clothing.

Section 9, Physical & Chemical Properties

APPEARANCE: Liquid, Water-White
ODOR: Mild
ODOR THRESHOLD: Not Available
pH (Neutrality): Not Available
MELTING POINT/FREEZING POINT: Not Available
BOILING RANGE (IBP,50%,Dry Point): 171° 190° 204°* C/340° 374° 400°* F(*=End Point)
FLASH POINT (TEST METHOD): 52° C / 127° F (TCC)
EVAPORATION RATE (n-Butyl Acetate=1): Not Applicable
FLAMMABILITY CLASSIFICATION: Class II
LOWER FLAMMABLE LIMIT IN AIR (% by vol): 0.95
UPPER FLAMMABLE LIMIT IN AIR (% by vol): Not Available
VAPOR PRESSURE (mm of Hg)@20° C 0.849
VAPOR DENSITY (air=1): 5.2
GRAVITY @ 68/68° F / 20/20° C: 0.771
DENSITY: SPECIFIC GRAVITY (Water=1): 0.772
POUNDS/GALLON: 6.432
Section 10, Stability & Reactivity

10.1 Reactivity & Chemical Stability:
Stable under normal conditions, no hazardous reactions when kept from incompatibles.

10.2 Possibility of Hazardous Reactions & Conditions to Avoid:
Isolate from oxidizers, heat, & open flame.

10.3 Incompatible Materials:
Reacts with strong oxidants, causing fire & explosion hazard.

10.4 Hazardous Decomposition Products:
Carbon Monoxide, Carbon Dioxide from burning.

10.5 Hazardous Polymerization:
Will not occur.

Section 11, Toxicological Information

11.1 Acute Hazards

11.11 Eye & Skin Contact:
Primary irritation to skin, defatting, dermatitis. Primary irritation to eyes, redness, tearing, blurred vision. Liquid can cause eye irritation. Wash thoroughly after handling.

11.12 Inhalation:
Anesthetic. Irritates respiratory tract. Acute overexposure can cause serious nervous system depression. Vapor harmful.

11.13 Swallowing:
Aspiration Hazard! Harmful or fatal if swallowed. Do NOT induce vomiting. If spontaneous vomiting occurs, keep victim's head below the waist to prevent aspiration. Swallowing can cause abdominal irritation, nausea, vomiting & diarrhea. The symptoms of chemical pneumonitis may not show up for a few days.

11.2 Subchronic Hazards/Conditions Aggravated

11.3 Chronic Hazards

11.31 Cancer, Reproductive & Other Chronic Hazards:
This product has no carcinogens listed by IARC, NTP, NIOSH, OSHA or ACGIH, as of this date, greater or equal to 0.1%.
11.32 TARGET ORGANS: May cause damage to target organs, based on animal data.

11.33 IRRITANCY: Irritating to contaminated tissue.

11.34 SENSITIZATION: No component is known as a sensitizer.

11.35 MUTAGENICITY: No known reports of mutagenic effects in humans.

11.36 EMBRYOTOXICITY: No known reports of embryo toxic effects in humans.

11.37 TERATOGENICITY: No known reports of teratogen effects in humans.

11.38 REPRODUCTIVE TOXICITY: No known reports of reproductive effects in humans.

A MUTAGEN is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate across generational lines. An EMBRYOTOXIN is a chemical which causes damage to a developing embryo (such as: within the first 8 weeks of pregnancy in humans), but the damage does not propagate across generational lines. A TERATOGEN is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines. A REPRODUCTIVE TOXIN is any substance which interferes in any way with the reproductive process.

11.4 MAMMALIAN TOXICITY INFORMATION

No mammalian information is available on this product.

Section 12, Ecological Information

12.1 ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

12.2 EFFECT OF MATERIAL ON PLANTS AND ANIMALS:
This product may be harmful or fatal to plant and animal life if released into the environment. Refer to Section 11 (Toxicological Information) for further data on the effects of this product's components on test animals.

12.3 EFFECT OF MATERIAL ON AQUATIC LIFE:
No aquatic environmental information is available on this product. Environmental effects of the substance have not been investigated adequately.

12.4 MOBILITY IN SOIL
This material is a mobile liquid.

12.5 DEGRADABILITY
This product is partially biodegradable.

12.6 ACCUMULATION
Bioaccumulation of this product has not been determined.
Section 13, Disposal Considerations

The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers and liners may retain some product residues. Vapor from some product residues may create a highly flammable or explosive atmosphere inside the container. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE USED CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY BURST AND CAUSE INJURY OR DEATH. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Processing, use or contamination may change the waste disposal requirements. Do not dispose of on land, in surface waters, or in storm drains. Waste should be recycled or disposed of in accordance with regulations. Large amounts should be collected for reuse or consigned to licensed hazardous waste haulers for disposal.

ALL DISPOSAL MUST BE IN ACCORDANCE WITH ALL FEDERAL, STATE, PROVINCIAL, AND LOCAL REGULATIONS. IF IN DOUBT, CONTACT PROPER AGENCIES. EPA CHARACTERISTIC: D001

Section 14, Transportation Information

MARINE POLLUTANT: No
DOT/TDG SHIP NAME: NONBULK: Non Regulated – 49 CFR 173.150(f)
DRUM LABEL: Non Regulated – 49 CFR 173.150(f)
IATA / ICAO: UN1993, Flammable liquid, n.o.s., (Contains: Petroleum Distillates), 3, PG-III
IMO / IMDG: UN1993, Flammable liquid, n.o.s., (Contains: Petroleum Distillates), 3, PG-III
EMERGENCY RESPONSE GUIDEBOOK NUMBER: 128

Section 15, Regulatory Information

15.1 EPA REGULATION:
SARA SECTION 311/312 HAZARDS: Acute Health, Fire
All components of this product are on the TSCA list.
This material contains no known products restricted under SARA Title III, Section 313 in amounts greater or equal to 1%.

15.2 STATE REGULATIONS:
THIS PRODUCT MEETS REQUIREMENTS OF SOUTHERN CALIFORNIA AQMD RULE 443.1 & SIMILAR REGULATIONS
CALIFORNIA PROP 65 This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

15.3 INTERNATIONAL REGULATIONS
The identified components of this product are listed on the chemical inventories of the following countries:
Australia (AICS), Canada (DSL or NDSL), China (IECSC), Europe (EINECS, ELINCS), Japan (METI/CSCL, MHLW/ISHL), South Korea (KECI), New Zealand (NZIoC), Philippines (PICCS), Switzerland (SWISS), Taiwan (NECSI), USA (TSCA).

15.4 CANADA: WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS)
B3: Combustible Liquid.
D2B: Irritating to eyes/skin.
This product has been classified in accordance with hazard criteria of the Controlled Products Regulations (CPR) and the SDS contain all information required by the CPR.
Section 16, Other Information

16.1 HAZARD RATINGS:
Health: 1, Flammability: 2, Reactivity: 0, Personal Protection: X
(Personal Protection Rating to be supplied by user based on use conditions.)
This information is intended solely for the use of individuals trained in the NFPA & HMIS hazard rating systems.

16.2 EMPLOYEE TRAINING
See Section 2 for Risk & Safety Statements. Employees should be made aware of all hazards of this material (as stated in this SDS) before handling it.

16.3 SDS REVISION DATE: 2/27/2019

Notice:
Buttefield Color, Inc. expressly disclaims all express or implied warranties of merchantability and fitness for a particular purpose with respect to the product or information provided herein, and shall under no circumstances be liable for incidental or consequential damages. All information appearing herein is based upon data obtained from manufacturers and/or recognized technical sources. While the information is believed to be accurate, we make no representations as to its accuracy or sufficiency.

Conditions of use are beyond our control, and therefore users are responsible for verifying the data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their handling, and disposal of the product. Users also assume all risks in regards to the publication or use of, or reliance upon information contained herein.

This information relates only to the product designated herein, and does not relate to its use in combination with any other material or process.

Prepared By: HS&E Compliance Resources