1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name
Release Agent

Product Code(s)

(M)SDS Number
1350448_A

Other means of identification

UN-No.
UN1262

Synonyms
None

Recommended use of the chemical and restrictions on use

Recommended Use
Laboratory Use Only

Uses advised against
No information available

Details of the supplier of the safety data sheet

Manufacturer
Buehler

Manufacturer Address
41 Waukegan Rd
Lake Bluff, IL 60044
www.buehler.com

Phone number
+1 847 295 6500

E-mail Address
custserv@buehler.com

Emergency telephone number

Global Access Code: 334545
Americas: +1 760 476 3962
Asia Pacific: +1 760 476 3960
Middle East/Africa: +1 760 476 3959
Europe: +1 760 476 3961

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

<table>
<thead>
<tr>
<th>Property</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin corrosion/iritation</td>
<td>Category 2</td>
</tr>
<tr>
<td>Specific target organ toxicity</td>
<td>Category 3</td>
</tr>
<tr>
<td>(single exposure)</td>
<td></td>
</tr>
<tr>
<td>Aspiration toxicity</td>
<td>Category 1</td>
</tr>
<tr>
<td>Flammable liquids</td>
<td>Category 2</td>
</tr>
</tbody>
</table>
GHS Label elements, including precautionary statements

Emergency Overview

Signal word | Danger
---|---

Hazard Statements
Causes skin irritation
May cause drowsiness or dizziness
May be fatal if swallowed and enters airways
Highly flammable liquid and vapor

![GHS symbols]

Appearance | Clear  
Physical state | Liquid  
Odor | Petroleum

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Use explosion-proof electrical/ventilating/lighting/equipment
Keep cool

Precautionary Statements - Response
Specific treatment (see supplemental first aid instructions on this label)

Skin
If skin irritation occurs: Get medical advice/attention
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse

Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician if you feel unwell

Ingestion
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Do NOT induce vomiting

Fire
In case of fire: Use CO2, dry chemical, or foam for extinction

Precautionary Statements - Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Not applicable

Unknown Toxicity
0 % of the mixture consists of ingredient(s) of unknown toxicity

Other information
Very toxic to aquatic life with long lasting effects
PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION

Interactions with Other Chemicals
No information available.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS No</th>
<th>Weight-%</th>
<th>Trade Secret</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isooctane</td>
<td>540-84-1</td>
<td>90 - 100%</td>
<td>*</td>
</tr>
</tbody>
</table>

*The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

First aid measures

General Advice
Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Eye contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue rinsing.

Skin contact
Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation develops and persists.

Inhalation
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, (trained personnel should) give oxygen.

Ingestion
Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Aspiration hazard if swallowed - can enter lungs and cause damage. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Call a physician or Poison Control Center immediately.

Self-protection of the first aider
Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects
Difficulty in breathing. Coughing and/ or wheezing. Dizziness. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and
vomiting.

Indication of any immediate medical attention and special treatment needed

Notes to Physician
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Dry chemical, CO2, water spray or regular foam. Use water spray or fog; do not use straight streams.

Unsuitable extinguishing media
CAUTION: All these products have a very low flash point: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical
Vapors can form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks). Vapor explosion hazard indoors, outdoors or in sewers. Runoff to sewer may create fire or explosion hazard. Some may be transported hot.

Uniform Fire Code
Irritant: Liquid

Explosion Data
Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge Yes.

Protective equipment and precautions for firefighters
Move containers from fire area if you can do it without risk.
6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions

Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. See section 8 for more information. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material.

Other Information

Water spray may reduce vapor; but may not prevent ignition in closed spaces.

Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment

A vapor suppressing foam may be used to reduce vapors. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.

Methods for cleaning up

Use clean non-sparking tools to collect absorbed material. Dike far ahead of liquid spill for later disposal. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Use personal protection equipment. Avoid contact with skin and eyes. Avoid breathing vapors or mists. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Use with local exhaust ventilation. Use spark-proof tools and explosion-proof equipment. Keep in an area equipped with sprinklers. Use according to package label instructions.

Conditions for safe storage, including any incompatibilities

Storage

Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labeled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers. Store in accordance with the particular national regulations. Store in accordance with local regulations.

Incompatible Products


8. EXPOSURE CONTROLS/PERSONAL PROTECTION
Control parameters

Exposure Guidelines
This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isooctane</td>
<td>TWA: 300 ppm</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>540-84-1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits NIOSH IDLH Immediately Dangerous to Life or Health

Appropriate engineering controls

Engineering Measures
Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/face protection
Tight sealing safety goggles.

Skin and body protection

Respiratory protection
If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
<td>Odor</td>
<td>Petroleum</td>
</tr>
<tr>
<td>Appearance</td>
<td>Clear</td>
<td>Odor Threshold</td>
<td>No information available</td>
</tr>
<tr>
<td>Color</td>
<td>No information available</td>
<td>Odor Threshold</td>
<td>No information available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Melting / freezing point</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Boiling point / boiling range</td>
<td>96°C °C / 205 °F</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Flash Point</td>
<td>-5°C C / 19 F</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Flammability Limit in Air</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper flammability limit</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Lower flammability limit</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Vapor density</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.720</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
None under normal processing.

Conditions to avoid
Heat, flames and sparks.

Incompatible materials

Hazardous Decomposition Products
None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation
Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract. Aspiration into lungs can produce severe lung damage. May cause pulmonary edema. Pulmonary edema can be fatal. May cause drowsiness or dizziness.

Eye contact
Specific test data for the substance or mixture is not available. May cause redness, itching, and pain. May cause irritation.

Skin contact
Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components). Repeated exposure may cause skin dryness or cracking.

Ingestion
Specific test data for the substance or mixture is not available. Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Potential for aspiration if swallowed. May cause lung damage if swallowed. Aspiration may cause pulmonary edema and pneumonitis. May be fatal if
swallowed and enters airways. (based on components).

Component Information

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isooctane 540-84-1</td>
<td>&gt; 2500 mg/kg (Rat)</td>
<td>&gt; 2000 mg/kg (Rabbit)</td>
<td>= 47.4 mg/L (Rat) 1 h</td>
</tr>
</tbody>
</table>

Information on toxicological effects

Symptoms

Erythema (skin redness). May cause redness and tearing of the eyes. Difficulty in breathing. Coughing and/or wheezing. Asthma-like and/or skin allergy-like symptoms. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization

No information available.

Mutagenic Effects

No information available.

Carcinogenicity

Contains no ingredient listed as a carcinogen.

Reproductive toxicity

No information available.

STOT - single exposure

Based on classification criteria from the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200), this product has been determined to cause systemic target organ toxicity from acute exposure. (STOT SE). If this product is a mixture, the classification is not based on toxicology studies for this product, but is based solely on toxicology studies for ingredients found within this product. Detailed substance and/or ingredient information may be provided in other sections of this SDS. Target organs effects listed in this document may result from a single overexposure to this product. Central nervous system (CNS).

STOT - repeated exposure

No information available.

Chronic Toxicity

Aspiration may cause pulmonary edema and pneumonitis.

Target Organ Effects

Respiratory system. Eyes. Skin.

Aspiration Hazard

No information available.

Numerical measures of toxicity

Product Information

The following values are calculated based on chapter 3.1 of the GHS document
12. ECOLOGICAL INFORMATION

This product contains a chemical which is listed as a marine pollutant according to DOT

Ecotoxicity
Very toxic to aquatic life with long lasting effects.

Persistence and Degradability
No information available.

Bioaccumulation
No information available

Other adverse effects
No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal methods
This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261). Should not be released into the environment. Dispose of contents/containers in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated Packaging
Dispose of contents/containers in accordance with local regulations.

US EPA Waste Number
D001

California Hazardous Waste Codes 331
This product contains one or more substances that are listed with the State of California as a hazardous waste.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>California Hazardous Waste</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isooctane</td>
<td>Toxic</td>
</tr>
<tr>
<td>540-84-1</td>
<td>Ignitable</td>
</tr>
</tbody>
</table>

14. TRANSPORT INFORMATION

DOT

UN-No. UN1262
Proper Shipping Name OCTANES
Hazard Class 3
Packing Group II
Marine Pollutant
Description This product contains a chemical which is listed as a marine pollutant according to DOT
UN1262, OCTANES, 3, II (ISOOCTANE)
Emergency Response Guide Number 128

TDG

UN-No. UN1262
Proper Shipping Name OCTANES
Hazard Class 3
Packing Group  
Description  
II  
UN1262, OCTANES, 3, II

**MEX**

UN-No.  UN1262
Proper Shipping Name  OCTANES
Hazard Class  3
Packing Group  II
Description  UN1262, OCTANES, 3, II

**ICAO**

UN-No.  UN1262
Proper Shipping Name  OCTANES
Hazard Class  3
Packing Group  II
Description  UN1262, OCTANES, 3, II

**IATA**

UN-No.  UN1262
Proper Shipping Name  OCTANES
Hazard Class  3
Packing Group  II
ERG Code  3H
Description  UN1262, OCTANES, 3, II

**IMDG/IMO**

UN-No.  UN1262
Proper Shipping Name  OCTANES
Hazard Class  3
Packing Group  II
EmS-No.  F-E, S-E
Marine Pollutant  This product contains a chemical which is listed as a marine pollutant according to IMDG/IMO
Description  UN1262, OCTANES (ISOOCTANE), 3, II, (-7°C C.C.), MARINE POLLUTANT

**RID**

UN-No.  UN1262
Proper Shipping Name  OCTANES
Hazard Class  3
Packing Group  II
Classification code  F1
Description  UN1262, OCTANES, 3, II, ENVIRONMENTALLY HAZARDOUS

**ADR**

UN-No.  UN1262
Proper Shipping Name  OCTANES
Hazard Class  3
Packing Group  II
Classification code  F1
Tunnel restriction code  (D/E)
Description  UN1262, OCTANES, 3, II, ENVIRONMENTALLY HAZARDOUS

**ADN**

UN-No.  UN1262
Proper Shipping Name  OCTANES
Hazard Class  3
Packing Group  II
Classification code  F1
Description  UN1262, OCTANES, 3, II
Hazard Labels  3
Limited Quantity  1 L
15. REGULATORY INFORMATION

International Inventories

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute Health Hazard: Yes
Chronic Health Hazard: No
Fire Hazard: Yes
Sudden release of pressure hazard: No
Reactive Hazard: No

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical name | Hazardous Substances RQs | Extremely Hazardous Substances RQs | RQ
--- | --- | --- | ---
Isooctane 540-84-1 | 1000 lb | | RQ 1000 lb final RQ
| | | RQ 454kg final RQ

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
<th>Rhode Island</th>
<th>Illinois</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isooctane 540-84-1</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

International Regulations

Canada
WHMIS Hazard Class
Not determined

16. OTHER INFORMATION
NFPA  Health Hazards 2  Flammability 3  Instability 0  Physical and Chemical Hazards
HMIS  Health Hazards 2  Flammability 3  Physical Hazard 0  Personal Protection

Prepared By  Product Stewardship
23 British American Blvd.
Latham, NY 12110
1-800-572-6501

Issuing Date  15-Sep-2016
Revision Date  13-Apr-2017
Revision Note  No information available

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet