DYNALOY, INC.
Engineered Chemistries

TECHNICAL DATA SHEET

Certified ISO 9001

DYNAFLUSH/ DYNASOLVE CU-5/ DYNASOLVE CU-6

SAFETY FLUSHING AND CLEANING SOLVENTS

Dynaflush, Dynasolve CU-5, and Dynasolve CU-6 are unique solvents that were developed for use in flushing and cleaning urethane residues and crystallized isocyanates from various types of polyurethane processing equipment. Dynaflush is recommended for flushing uncured urethane residues and isocyanates as well as uncured epoxies. Dynasolve CU-5 is recommended for cleaning cured urethanes and crystallized isocyanates. Dynasolve CU-6 is a non-gelling, higher flash point version of Dynasolve CU-5, and is recommended for both flushing and cleaning, especially in applications in which liquid isocyanates are present either prior to cleaning, or will be introduced after cleaning (such as in a mixing tank). Dynaflush, Dynasolve CU-5, and Dynasolve CU-6 are non-chlorinated, nonflammable (per DOT), non-carcinogenic, non-ozone depleting solvents designed to replace solvents such as methylene chloride, acetone, MEK, and 1,1,1-trichloroethane. While they are more aggressive than methylene chloride, they have the benefits of being safer in the workplace and friendlier to the environment. Dynaflush, Dynasolve CU-5, and Dynasolve CU-6 can be used for extended periods, tolerate high resin loadings, and will reduce disposal costs. They are also recyclable via vacuum distillation. For additional information regarding recycling and our replenisher concentrates Dynasolve DF-1, Dynasolve DF-5, and Dynasolve DF-6, please refer to our brochure "The Solutions For Polyurethanes" and the data sheets for these solvents.

APPLICATIONS:

1. Dynaflush and Dynasolve CU-6 are especially effective for flushing mixing and metering equipment and feed lines, as they quickly and completely dissolve polyols, crystallized isocyanates, and other urethane intermediates. Dynaflush is an excellent uncured epoxy flushing solvent as well.
2. Dynasolve CU-5 and Dynasolve CU-6 are very effective in penetrating, loosening, and removing cured urethane foam deposits and build-up from mixing heads, troughs, conveyor parts, side walls, rollers, foam cutting devises and molds.
3. Dynasolve CU-5 and Dynasolve CU-6 will dissolve all types of urethanes: flexible, rigid, elastomer, or molded. Effective for both MDI and TDI esters and ethers.
4. Dynasolve CU-5 and Dynasolve CU-6 will quickly and completely dissolve residual cured reactive hot melt (RHM) urethane adhesives from roll coating equipment. They will also dissolve these same reactive hot melts from dispensing equipment.
5. Dynasolve CU-5 and Dynasolve CU-6 are excellent for the removal of polymer-based inks from rollers in flexographic printing equipment.
6. When heated, Dynasolve CU-5 and Dynasolve CU-6 will also dissolve many types of epoxies and other adhesives.
7. Dynasolve CU-6 is recommended for applications where liquid isocyanates are present either prior to cleaning or will be introduced after cleaning (such as in a mixing tank). *However, in cleaning of isocyanate sides of equipment, Iso-Neutralizer should be used if excessive amounts of liquid isocyanates are present.* Dynasolve CU-6 will not gel in contact with liquid isocyanates, but only if limited amounts are present.
8. Dynasolve CU-5 has been assigned the national stock number NSN/LSN 6850-LL-076-7721 by the United States Navy.
9. Dynasolve CU-5 can be used to remove urethane residue build-up from molds.

10. In addition, Dynaflush is effective for the removal of "wafer grip" material used in wafer manufacturing. For this application, Dynaflush is used in a soak tank at 120-150°C.

TYPICAL PROPERTIES:

	DYNAFLUSH	DYNASOLVE CU-5	DYNASOLVE CU-6
Color:	Clear	Clear	Clear
Specific Gravity:	1.08	1.06	1.06
Boiling Point:	395°F	411°F	433°F
Flash Point:	191°F	198°F	210°F
pH:	4.5-6.5	6.5-8.5	6.5-8.5

DIRECTIONS FOR USE:

1. ***For Flushing:***
   Use Dynaflush or Dynasolve CU-6 as you would normally use any other flushing solvent. Mild heating of the solvent will product faster results. The use of compressed air for agitation of the solvent will also help to facilitate cleaning. *If excessive amounts of liquid isocyanates are present, Dynasolve Iso-Neutralizer **must** be used first. Failure to use the Iso-Neutralizer may lead to gelling of the flushing solvents.*

2. ***For Residue Removal:***
   Immerse parts to be cleaned in Dynasolve CU-5 or Dynasolve CU-6. Let soak until residue is loosened and can be wiped or brushed off. Then rinse parts with water and dry. Mild heating of the solvent and/or the use of ultrasonics will produce faster results.

   For the most difficult applications, more aggressive (reactive) solvents are available, such as Dynasolve 710, 711, and 750. Please refer to our Solvent Selection Guide and individual data sheets for more information on these solvents.

3. ***Materials of Construction:***
   Recommended: Teflon, butyl rubber, silicon rubber, Kalrez, mild steel, Halar, melamine, Nylon 101, polyethylene, polypropylene
   Avoid: Viton, PVC, ABS, Buna-N, Durel, Hypalon, Kynar, Lexan, Lucite, Neoprene, Noryl EN-265, Noryl 731, PET, phenolic, polyester, polysulfone, polyurethane, Ultem, Valox

CAUTION:

Dynaflush, Dynasolve CU-5, and Dynasolve CU-6 contain powerful organic solvents. It is harmful if inhaled or swallowed. Avoid breathing vapors or mist. Keep away from heat and flame. Avoid contact with eyes and skin. Wear gloves, safety goggles, and protective clothing when handling. Use with adequate ventilation. Refer to MSDS before use, for disposal, or additional safe handling.

AVAILABILITY AND TERMS:

Dynaflush, Dynasolve CU-5, and Dynasolve CU-6 are packed in pints, quarts, 9 pint bottles, 5-gallon pails and 55-gallon drums. They are stock items and can be shipped by UPS (ground or air), truck, or air freight. Terms are Net 30 days, FOB shipping point. Prices subject to change without notice.

Last Revised By: Lauri Kirby
Last Revision Date: 10/18/00

Material Safety Data Sheet

HMIS Ratings
Health 3
Flammability 1
Reactivity 0
Protection X

1 Chemical Product and Company Identification

Manufacturer Information	Dynaloy, Inc. 1910 South State Avenue Indianapolis, IN 46203
Phone	(317) 788-5694
Emergency Phone	1-800-424-9300 (CHEMTREC) FOR INTERNATIONAL CALLS 703-527-3887
Date Prepared	2001-Nov-02
Supercedes	2001-Nov-01
Product Identity	DYNASOLVE CU-6
Product Code Number	J001
Version #	1.0
CAS #	Mixture

2 Composition / Information on Ingredients

Ingredient Name	CAS Number	Wgt. %	Exposure Limits PEL-OSHA	Exposure Limits TLV-ACGIH	Carcinogen
2-PYRROLIDINONE, 1-METHYL-	872-50-4	40 - 70			No
2(3H)-FURANONE, DIHYDRO-	96-48-0	10 - 30			No
ETHANOL, 2-PHENOXY-	122-99-6	10 - 30			No
Non-hazardous and other ingredients below reportable levels	Proprietary	5	N/AP	N/AP	N/AP

3 Hazards Identification

Potential Health Effects

Skin	Prolonged and/or repeated skin contact with this product may cause irritation/dermatitis.
Eyes	Contact can cause moderate to severe irritation and possible injury to the eyes.
Inhalation	Exposure to oil mist/fume/vapor may cause respiratory tract irritation. Excessive inhalation of this product may cause headache, dizziness, blurred vision, nausea and vomiting.
Ingestion	Ingestion can cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Hazard Statements

CAUTION: EYE AND SKIN IRRITANT.

4 First Aid Measures

First Aid

Skin	For skin contact flush with large amounts of water while removing contaminated clothing. Wash contaminated clothing before reuse. If irritation persists, get medical attention.
Eyes	Flush immediately with water for at least 15 minutes. Do not rub eyes. Get medical attention or advice.
Inhalation	If mist or vapor of this product is inhaled, remove person immediately to fresh air. Seek medical attention if symptoms develop or persist.
Ingestion	Call a physician immediately. DO NOT induce vomiting unless directed to do so by medical personnel.

5 Fire Fighting Measures

Hazardous Combustion Products

Carbon monoxide and carbon dioxide.

Extinguishing Media

Dry chemical (preferred), alcohol foam, water. Use water to cool fire-exposed containers and to protect personnel.

Fire Fighting Equipment/Instructions

Firefighters should wear full protective clothing including self contained breathing apparatus.

Flash Point	99 C
Flammability Limits in Air, Lower, % by Volume	N/AV
Flammability Limits in Air, Upper, % by Volume	N/AV

6 Accidental Release Measures

Containment Procedures

Eliminate sources of ignition. Dike the spilled material, where this is possible. Absorb with inert absorbent such as dry clay, sand or diatomaceous earth, commercial sorbents, or recover using pumps.

Clean-Up Procedures

Absorb spill with inert material. Shovel material into appropriate container for disposal.

7 Handling and Storage

Handling Procedures

Avoid getting this material into contact with your skin and eyes.

Storage Procedures

Keep the container tightly closed and in a cool, well-ventilated place. Do not freeze.

8 Exposure Controls / Personal Protection

Engineering Controls

Explosion proof exhaust ventilation should be used.

Personal Protective Equipment

Eyes/Face

Wear chemical goggles.

Skin

Use impervious gloves. Use of impervious apron and boots are recommended.

Personal Protective Equipment

Respiratory

If ventilation is not sufficient to effectively prevent buildup of vapors, appropriate NIOSH/MSHA respiratory protection must be provided

General

Eye wash fountain and emergency showers are recommended. Use good industrial hygiene practices in handling this material.

9 Physical & Chemical Properties

Boiling Point	> 200 C
Specific Gravity	1.06
Vapor Pressure	< 1 mm Hg
Solubility (H2O)	complete
VOC	8.76 lb/gal

10 Chemical Stability & Reactivity Information

Chemical Stability

Stable under normal conditions.

Hazardous Decomposition

Hazardous combustion products may include carbon monoxide, carbon dioxide and hydrocarbon fragments.

Hazardous Polymerization

Will not occur.

Incompatibility

Strong oxidizing agents (peroxides, chlorine, strong acids).

11 Toxicological Information

Toxicological Information

No data available for this product.

12 Ecological Information

Ecological Information

No data available for this product.

Environmental Effects

No data available for this product.

13 Disposal Considerations

Disposal Instructions

Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

14 Transportation Information

General

This product is not regulated as a hazardous material by the United States (DOT) or Canadian (TDG) transportation regulations.

15 Regulatory Information

US Federal Regulations

All components are on the U.S. EPA TSCA Inventory List.

CERCLA/SARA - Section 313 - Emission Reporting

ETHANOL, 2-PHENOXY-

16 Other Information

Disclaimer

NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Material Safety Data Sheet. However, MSDS may not be used as a commercial specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as to the accuracy or comprehensiveness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. In addition, no responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product.

Prepared By	Technical Department
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