DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

PERMIT TO CONSTRUCT APPLICATION

Revision 3
04/03/07

Please see instructions on page 2 before filling out the form.

DEQ USE ONLY
Date Received RECEIVED FEB 12 2008 Department of Environmental Quality State Air Program
Project Number
Payment / Fees Included? Yes ☒ No ☐
Check Number 031720

COMPANY NAME, FACILITY NAME, AND FACILITY ID NUMBER

1. Company Name	Western Aircraft Inc.	
2. Facility Name	Western Aircraft Inc. (Hangar #3)	3. Facility ID No.
4. Brief Project Description - One sentence or less	Installation of Nova Verta Downdraft Spray Booth and Prep Station	

PERMIT APPLICATION TYPE

5. ☐ New Facility ☒ New Source at Existing Facility ☐ Unpermitted Existing Source
☐ Modify Existing Source: Permit No.:_____ Date Issued:_____
☐ Required by Enforcement Action: Case No.:_____

6. ☒ Minor PTC ☐ Major PTC

FORMS INCLUDED

Included	N/A	Forms	DEQ Verify
☒	☐	Form GI – Facility Information	☐
☐	☒	Form EU0 – Emissions Units General	☐
☐	☒	Form EU1 - Industrial Engine Information Please Specify number of forms attached: _____	☐
☐	☒	Form EU2 - Nonmetallic Mineral Processing Plants Please Specify number of forms attached: _____	☐
☒	☐	Form EU3 - Spray Paint Booth Information Please Specify number of forms attached: _____	☐
☐	☒	Form EU4 - Cooling Tower Information Please Specify number of forms attached: _____	☐
☐	☒	Form EU5 – Boiler Information Please Specify number of forms attached: _____	☐
☐	☒	Form HMAP – Hot Mix Asphalt Plant Please Specify number of forms attached: _____	☐
☐	☒	Form CBP - Concrete Batch Plant Please Specify number of forms attached: _____	☐
☐	☒	Form BCE - Baghouses Control Equipment	☐
☐	☒	Form SCE - Scrubbers Control Equipment	☐
☐	☒	Forms EI-CP1 - EI-CP4 - Emissions Inventory– criteria pollutants (Excel workbook, all 4 worksheets)	☐
☐	☒	PP – Plot Plan	☐
☐	☒	Forms MI1 – MI4 – Modeling (Excel workbook, all 4 worksheets)	☐
☐	☒	Form FRA – Federal Regulation Applicability	☐

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PERMIT TO CONSTRUCT APPLICATION

Revision 3
03/26/07

Please see instructions on page 2 before filling out the form.

All information is required. If information is missing, the application will not be processed.

IDENTIFICATION	
1. Company Name	Western Aircraft Inc.
2. Facility Name (if different than #1)	
3. Facility I.D. No.	
4. Brief Project Description:	Installation of Nova Verta Downdraft Spray Booth and Prep Station
FACILITY INFORMATION	
5. Owned/operated by: (√ if applicable)	☐ Federal government ☐ County government ☐ State government ☐ City government
6. Primary Facility Permit Contact Person/Title	Brian Rehberg, V.P. of Aircraft Services
7. Telephone Number and Email Address	(208)338-1851 brianr@westair.com
8. Alternate Facility Contact Person/Title	Ken Hawk, V.P. of FBO Services
9. Telephone Number and Email Address	(208) 338-1831 kenh@westair.com
10. Address to which permit should be sent	4300 S. Kennedy Street
11. City/State/Zip	Boise, Idaho 83705
12. Equipment Location Address (if different than #10)	
13. City/State/Zip	
14. Is the Equipment Portable?	☐ Yes ☒ No
15. SIC Code(s) and NAISC Code	Primary SIC: 4581 Secondary SIC (if any): NAICS: 488119
16. Brief Business Description and Principal Product	Aircraft Interior refurbishment (refinishing cabinets, recovering walls and headliners with fabric)
17. Identify any adjacent or contiguous facility that this company owns and/or operates	None
PERMIT APPLICATION TYPE	
18. Specify Reason for Application	☐ New Facility ☒ New Source at Existing Facility ☐ Unpermitted Existing Source ☐ Modify Existing Source: Permit No.:_____ Date Issued: _____ ☐ Permit Revision ☐ Required by Enforcement Action: Case No.:_____
CERTIFICATION	
IN ACCORDANCE WITH IDAPA 58.01.01.123 (RULES FOR THE CONTROL OF AIR POLLUTION IN IDAHO), I CERTIFY BASED ON INFORMATION AND BELIEF FORMED AFTER REASONABLE INQUIRY, THE STATEMENTS AND INFORMATION IN THE DOCUMENT ARE TRUE, ACCURATE, AND COMPLETE.	
19. Responsible Official's Name/Title	Brian Rehberg, V.P. of Aircraft Services
20. RESPONSIBLE OFFICIAL SIGNATURE	Date: February 8, 2008
21. ☒ Check here to indicate you would like to review a draft permit prior to final issuance.	

Emissions Units - Spray Paint Booth Information **Form EU3**

DEQ AIR QUALITY PROGRAM
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PERMIT TO CONSTRUCT APPLICATION

Revision 3
03/27/07

Please see instructions on page 2 before filling out the form.

IDENTIFICATION

Company Name:	Facility Name:	Facility ID No:
Western Aircraft Inc.	Western Aircraft Inc (Hangar #3)	

Brief Project Description: Installation of Nova Verta Downdraft Spray Booth and Prep Station

BOOTH INFORMATION

1. Booth Type: ☒ New Booth ☐ Unpermitted Existing Booth
☐ Modification to a Permitted Booth, Permit #: , Date Issued:

2. Construction Date:

SPRAY GUN DESCRIPTION AND SPECIFICATIONS

Gun No.	3. Manufacturer	4. Model	5. Type	6. Transfer Eff. %	7. Rated Capacity (gal/hr)
1	SATA (See attached addendum #1)	SATAjet 3000	HVLP	>65%	2.8 Gallons per hour
2	SATA (See attached addendum #1)	SATAjet 3000	HVLP	>65%	2.8 Gallons per hour
3					
4					

Number of guns to be used simultaneously:

SPRAY MATERIAL DESCRIPTION AND SPECIFICATIONS

8. Type of Spray Material Used	9. Type of Material Coated	10. Max. Usage (gal/day)	11. Solid TAP/HAP Content (lb/gal)	12. VOC TAP/HAP Content (lb/gal)	13. MSDS Attached? (Y/N)
See attached spreadsheet					

REQUEST FOR PERMIT LIMITATIONS

14. Are you requesting any permit limits? ☐ No ☒ Yes. If Yes, check all that apply below and fill in requested limit(s)

☒ Operation Hour Limits: 654 hours per year	☐ Production Limits:
☐ Material Usage Limits:	☐ Other:

15. Rationale for Requesting the Limit(s): Operation will be a dayshift only operation

EMISSION CONTROL DEVICE (FILTER[b]) DESCRIPTION AND SPECIFICATIONS

Stack Served	16. Filter Manufacturer	17. Model	18. PM Control Efficiency(%)[a]	19. Dimension (Total Area, Thickness and Number of Filters)
Stack 1	Superior Glass Fibers	14AG Premium	96.5% 1st Stage	30'L x 56"W x 2.5T (Spray Booth)
Stack 2	Superior Glass Fibers	14AG Premium	99.1% 2nd Stage	16'L x 56"W x 2.5T (Spray Booth)
Stack 3	Superior Glass Fibers	14AG Premium	96.5% 1st Stage	14'L x 28"W x 2.5T (Prep Station)
Stack 4	Superior Glass Fibers	14AG Premium	99.1% 2nd Stage	16'L x 56"W x 2.5 T (Prep Station)

Notes: a. Provide either stack test data or vendor's documentation to support the control efficiency specified above.
b. Fill out and submit appropriate control equipment form(s) if this booth has a control device(s) other than a filter system.

BOOTH OPERATING SCHEDULE (indicate hours/day, hours/year, or other)

20. Actual Operation: 8 Hours per day	21. Maximum Operation: 8 Hours per day

Addendum:

1. Spray gun explanation: During the operation of this spray booth both spray guns will not be in operation at the same time. One gun will contain adhesives and one will contain a mixture of Permacron Clearcoat and Permasolid Hardeners.

2. 40CFR63 Subpart HHHHHH has been reviewed and is not applicable too our operation. There is a magnesium resinate present in the 3M 1357L Adhesive but according to the Chemical data sheet it is not a regulated chemical (See attached Chemical data sheet)

Chemical data sheet for:

MANGANESE RESINATE

Add to MyChemicals | Print Report

Section 1 - Chemical Identifiers
Section 2 - Hazards
Section 3 - Response Recommendations
Section 4 - Physical Properties
Section 5 - Regulatory Information
Section 6 - Alternate Chemical Names

Section 1 - Chemical Identifiers

Back to top | What is this information?

CAS Number	UN/NA Number	STCC Number	CHRIS Code
9008-34-8	1330	4916766	none

NFPA 704: NO CODES

DOT Hazard Label: FLAMMABLE SOLID

General Description

Manganese resinate ranges from a dark brown-black solid mass to a light tan powder. It may spontaneously heat in the presence of air or moisture. This heat may be sufficient to ignite surrounding combustible materials. It is insoluble in water. (NOAA Reactivity 2007)

Section 2 - Hazards

Back to top | What is this information?

Reactivity Alerts

- Highly Flammable
- Water-Reactive
- Air-Reactive

Air & Water Reactions

Highly flammable. This material will spontaneously heat in the presence of air and moisture. This heat may be sufficient to ignite surrounding combustible materials [AAR 1991]. Insoluble in water.

Fire Hazard

Flammable/combustible material. May be ignited by friction, heat, sparks or flames. Some may burn rapidly with flare burning effect. Powders, dusts, shavings, borings, turnings or cuttings may explode or burn with explosive violence. Substance may be transported in a molten form. May re-ignite after fire is extinguished. (DOT, 2000)

Health Hazard

Fire may produce irritating and/or toxic gases. Contact may cause burns to skin and eyes. Contact with molten substance may cause severe burns to skin and eyes. Runoff from fire control may cause pollution. (DOT, 2000)

Reactivity Profile

Inorganic reducing agents, such as MAGNESIUM RESINATE, react with oxidizing agents to generate heat and products that may be flammable, combustible, or otherwise reactive. Their reactions with oxidizing agents may be violent. (NOAA REACTIVITY, 2007)

Belongs to reactive group(s)

- Inorganic Reducing Agents

Section 3 - Response Recommendations

Back to top | What is this information? ▶

Fire Fighting

Use water in flooding quantities as fog. Use foam, dry chemical, or carbon dioxide. (© AAR, 2003)

Non-Fire Response

Keep sparks, flames, and other sources of ignition away. Keep material out of water sources and sewers. (© AAR, 2003)

Protective Clothing

Avoid breathing dusts, and fumes from burning material. Wear appropriate chemical protective gloves, boots and goggles. Do not handle broken packages unless wearing appropriate personal protective equipment. Wash away any material which may have contacted the body with copious amounts of water or soap and water. (© AAR, 2003)

First Aid

Move victim to fresh air. Call 911 or emergency medical service. Apply artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult. Remove and isolate contaminated clothing and shoes. In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes. Removal of solidified molten material from skin requires medical assistance. Keep victim warm and quiet. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. (DOT, 2000)

Section 4 - Physical Properties

Back to top | What is this information? ▶

Molecular Formula: data unavailable

Flash Point: data unavailable

Lower Explosive Limit: data unavailable

Upper Explosive Limit: data unavailable

Auto Ignition Temperature: data unavailable

Melting Point: data unavailable

Vapor Pressure: data unavailable

Vapor Density: data unavailable

Specific Gravity: data unavailable

Boiling Point: data unavailable

Molecular Weight: data unavailable

Water Solubility: data unavailable

AEGL: data unavailable

ERPG: data unavailable

TEEL: data unavailable

IDLH: 500.0 mg/m3 (as Mn) (NIOSH, 2003)

Section 5 - Regulatory Information

Back to top | What is this information?

Regulatory Names
No information available.

CAA RMP: Not a regulated chemical.

CERCLA: Not a regulated chemical.

EPCRA 302 EHS: Not a regulated chemical.

TRI (EPCRA 313): Not a regulated chemical.

RCRA chemical code: none

Section 6 - Alternate Chemical Names

Back to top | What is this information?

- MANGANESE RESIN ACID SALTS
- RESIN ACIDS, MANGANESE SALTS
- RÉSINATE DE MANGANÈSE (DOT FRENCH)
- RESINATO DE MANGANESO (DOT SPANISH)

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Department of Environmental Quality - Air Quality Division
Toxic Air Pollutant (TAP) Preconstruction Compliance Application Completeness Checklist

This checklist is designed to aid the applicant in submitting a complete preconstruction compliance demonstration for toxic air pollutants (TAPs) in permit to construct applications.

I. Actions Needed Before Submitting Application

☒ Refer to the Rule. Read the Demonstration of Preconstruction Compliance with Toxic Standards contained in IDAPA 58.01.01.210 (Section 210) Rules for the Control of Air Pollution in Idaho. Toxic air pollutants are regulated in accordance with Section 210 only from emission units constructed or modified on or after July 1, 1995.

Determine if a new (constructed after June 30, 1995) emission unit has the potential to emit a toxic air pollutant (TAP) listed in IDAPA 58.01.01.585 (Section 585) or IDAPA 58.0101.586 (Section 586). Potential toxic air pollutants can be determined by reviewing commonly available emission factors, such as EPA's AP-42, or calculating emissions using a mass balance. For toxic air pollutants that are emitted but not listed in Section 585 and 586, contact the Air Permit Hotline at 877-5PERMIT.

Determine if the proposed construction or modification is exempt from the need to obtain a permit to construct in accordance with IDAPA 58.01.01.220-223. Use the Exemption Criteria and Reporting Requirements for Toxic Air Pollutants IDAPA 58.01.01.223 checklist to assist you in the exemption determination. For all sources that do not qualify for an exemption in accordance with IDAPA 58.01.01.220-223 complete the following checklist and submit it with the permit application. Please note that fugitive TAP emissions are not included in the IDAPA 58.01.01.223 exemption determination, but fugitive TAP emissions are included in the analysis if a permit is required.

Will the new or modified source result in new or increased emissions of toxic air pollutants?

☒ Yes. If yes, continue to section II.

☐ No. If no, no further action is required.

II. Application Content

If a new source has the potential to emit a TAP, or if a modification to an existing source increases the potential to emit of a TAP, then one of the following methods (A-J) of demonstrating TAP preconstruction compliance must be documented for each TAP. Standard methods are one of A-C. The applicant may also use one of the specialized methods in D-J. Fugitive TAP emissions shall be included in the analysis. The compliance methods are based on the requirements of Section 210. Applicants are often able to demonstrate preconstruction TAP compliance using a combination of methods A and B.

Emission Calculations

Emissions calculation methodologies used are dependent on whether a specific TAP is a non-carcinogen or a carcinogen and whether the compliance method chosen from the list below calls for controlled or uncontrolled emissions. Non-carcinogens are regulated as a 24-hour averaged increment and values used for comparison to the non-carcinogen screening emissions level (EL) should be the maximum controlled or uncontrolled emissions quantity during any 24-hour period divided by 24. Carcinogens are regulated as a long term increment and values used for

comparison to the carcinogen EL should be the maximum controlled or uncontrolled emissions quantity during any 1 year period divided by 8760.

Modeling Analyses

Atmospheric dispersion modeling is required when applicable TAP emissions quantities exceed ELs. Modeling analyses should be conducted in accordance with IDAPA 58.01.01.210.03. Quantification of Ambient Concentrations and the State of Idaho Air Quality Modeling Guideline (http;//www.deq.idaho.gov/air/data_reports/publications.cfm#model). For non-carcinogen 24-hour increments, compliance is demonstrated using the maximum modeled 24-hour-averaged concentration from available meteorological data (typically a five-year data set). For carcinogen long-term increments, compliance is demonstrated using the maximum modeled average concentration for the duration of the data set (one-year to five-year data set).

A submitted modeling report should clearly specify modeled emissions rates and results. All electronic model input files should be submitted, including BPIP input files.

Compliance Methods

Fill in letter(s) (A-J) from the list below for TAP compliance demonstration method(s) used: _____.

A. TAPs Compliance Using Uncontrolled Emissions (Section 210.05)

☒ Calculate the uncontrolled emissions (Section 210.05) of each TAP from new emissions units. Uncontrolled emission rates are emissions at maximum capacity without the effect of physical or operational limitations. See Quantification of Emission Rates (Section 210.02). Show calculations and state all assumptions.

☒ Calculate the increase of TAP emissions from modified emissions units. Show calculations and state all assumptions. The increase in emissions for a modified emission unit is determined by subtracting the potential to emit the TAP before the modification from the uncontrolled potential to emit after the modification. In conducting this analysis please note the following for TAP emission rate increase determinations:

Uncontrolled emission rates after the modification are emissions at maximum capacity without the effect of physical or operational limitations.

When determining the emissions increase from existing permitted emissions units the emission rate before the modification is equivalent to the emission limits contained in the permit for the TAPs or, if there no emission limits in the permit, by determining what the emission rate is under the physical or operational limitations contained in the permit.

☒ Aggregate the uncontrolled emissions for each TAP from all new emissions units with the increase in emissions from all modified emissions units.

☒ If the aggregated emissions increase for each TAP from the new and modified units, as determined above, are less than or equal to the respective TAP screening emissions level (EL) then preconstruction compliance with toxic standards has been demonstrated and no further analysis is required. Submit a table comparing the uncontrolled emissions rate to the applicable EL.

If aggregated emissions are greater than the respective screening emissions level (EL) for any pollutants, use another compliance demonstration method for those pollutants, such as methods B, C, or D.

B. TAP Compliance Using Uncontrolled Ambient Concentration (Section 210.06)

☐ Determine the uncontrolled emissions of each TAP from new emission units and the increase in emissions from all modified emissions units as described above in compliance Method A. Show calculations and state all assumptions.

☐ Model the uncontrolled emissions of each TAP from new emissions units and the increase in emissions from all modified emissions units.

☐ If the uncontrolled ambient concentration is less than or equal to the acceptable ambient concentration increment listed in Section 585 and 586 no further procedures for demonstrating preconstruction compliance will be required for that toxic air pollutant as part of the application process. Submit a table comparing uncontrolled ambient concentrations to the applicable acceptable ambient concentration.

C. TAP Compliance Using Controlled Ambient Concentrations (Section 210.08)

☐ Determine the controlled emissions from new emissions units and the controlled emission increase from modified emissions units. Show all calculations and state all assumptions, including the control methods.

☐ Model the controlled emissions of each TAP from new emissions units and the increase in controlled emissions from all modified emissions units.

☐ If the controlled ambient concentration from emission increases from new emissions units and modified emissions units is less than the applicable acceptable ambient concentration no further procedures for demonstrating preconstruction compliance are required.

☐ The Department shall include an emission limit for the toxic air pollutant in the permit to construct that is equal to or, if requested by the applicant, less than the emission rate that was used in the modeling (Section 210.08.c).

In some instances the Department may consider a throughput limit or other inherently-limiting operational restriction in a permit as an effective emission limit for the TAP, rather than a TAP-specific emissions limit. Note that the applicant may model uncontrolled emissions as described in compliance Method B in an attempt to avoid TAPs emissions limitations.

D. TAPs Compliance for NSPS and NESHAP Sources (Section 210.20)

☐ If the owner or operator demonstrates that the toxic air pollutant from the source or modification is regulated by the Department or EPA at the time of the permit issuance under 40 CFR Part 60, 40 CFR Part 61 or 40 CFR Part 63, no further procedures for demonstrating preconstruction compliance will be required for that toxic air pollutant.

☐ Provide a demonstration that the toxic air pollutant is regulated under 40 CFR Part 60, 40 CFR Part 61 or 40 CFR Part 63. This demonstration must be specific for each TAP emitted.

E. TAP Compliance Using Net Emissions (Section 210.09)

An applicant may use TAP net emissions to show preconstruction compliance; however this analysis may require more work than some of the others procedures available to demonstrate preconstruction compliance. When netting, emissions increases and decreases of the TAP that have occurred within five years must be included in the analysis as described below.

☐ Determine the net emission increase for a TAP. A net emissions increase shall be an emission increase from a particular modification plus any other increase and decreases in actual emissions at the facility that are creditable and contemporaneous with particular modification (Section 210.09). Show all calculations and state all assumptions.

☐ A creditable increase or decrease in actual emissions is contemporaneous with a particular modification if it occurs within five (5) years of the commencement of the construction or modification (Section 210.09.a).

Actual emissions are (Section 006.03):

☐ In general, actual emissions as of a particular date shall equal the average rate, in tons per year, at which the unit actually emitted the pollutant during a two year period which precedes the particular date and which is representative of normal source operation. The Department shall allow the use of a different time period upon a determination that it is more representative of normal source operation. Actual emissions shall be calculated using the unit's actual operating hours, productions rates, and types of materials processed, stored, or combusted during the selected time period.

☐ The Department may presume that the source-specific allowable emissions for the unit are equivalent to actual emissions of the unit.

☐ For any emission unit (except electric utility steam generating units) that has not begun normal operations on the particular date, actual emissions shall equal the potential to emit of the unit on that date.

☐ Do not include emissions increases from emission units that have an uncontrolled emission rate that is 10% or less than the applicable screening emission level (EL) in Section 585 and 586 (Section 007.09.c.ii) and do not include emission increases from environmental remediation sources (Section 007.09.c.iii). Show all calculations and state all assumptions.

☐ If the net emission increase is less than or equal to the applicable screening emissions level (EL) listed in Section 585 and 586, no further procedures for demonstrating preconstruction compliance will be required (Section 210.09.c).

☐ The Department shall include emission limits and other permit terms for the toxic air pollutant in the permit to construct that will assure that the facility will be operated in the manner described in the preconstruction compliance demonstration (Section 210.09.d).

In some instances the Department may consider a throughput limit or other inherently-limiting operational restriction in a permit as an effective emission limit for the TAP, rather than a TAP-specific emissions limit.

F. TAP Compliance Using Net Ambient Concentration (Section 210.10)

☐ Determine the emission increase from the new source or modification, and all other creditable emission increases and decrease using the methods described above in compliance Method E.

☐ Model the emissions increases and decreases for each TAP. Modeling TAP decreases is accomplished by using negative valued emissions rates in the model input.

☐ If the net ambient concentration is less than or equal to the applicable ambient concentration increment listed in Section 585 and 586, no further procedures for demonstrating preconstruction compliance are required.

☐ The Department shall include emission limits and other permit terms for the toxic air pollutant in the permit to construct that will assure that the facility will be operated in the manner described in the preconstruction compliance demonstration (Section 210.10.d).

In some instances the Department may consider a throughput limit or other inherently-limiting operational restriction in a permit as an effective emission limit for the TAP, rather than a TAP-specific emissions limit.

G. TAP Compliance Using T-RACT Ambient Concentration for Carcinogens (Section 210.12)

The applicant may use T-RACT to demonstrate preconstruction compliance for toxic air pollutants listed in Section 586 only.

T-RACT is an emissions standard based on the lowest emission of toxic air pollutants that a particular source is capable of meeting by application of control technology that is reasonably available, as determined by the Department, considering technological and economic feasibility. If control technology is not feasible, the emission standard may be based on the application of a design, equipment, work practice or operational requirement, or combination thereof (Section 007.16).

T-RACT Submittal Requirements

☐ The applicant shall submit the following information to the Department identifying and documenting which control technologies or other requirements the applicant believes to be T-RACT (Section 210.14).

The technical feasibility of a control technology or other requirements for a particular source shall be determined considering several factors including but not limited to:

- ☐ Process and operating procedures, raw materials and physical plant layout.
- ☐ The environmental impacts caused by the control technology that can not be mitigated, including but not limited to, water pollution and the production of solid wastes.
- ☐ The energy requirements of the control technology.

The economic feasibility of a control technology or other requirement, including the costs of necessary mitigation measures, for a particular source shall be determined considering several factors including, but not limited to:

- ☐ Capital costs.
- ☐ Cost effectiveness, which is the annualized cost of the control technology divided by the amount of emission reduction.
- ☐ The difference in costs between the particular source and other similar sources, if any, that have implemented emissions reductions.

☐ Compare the source's or modification's approved T-RACT ambient concentration to the applicable acceptable ambient concentration increment listed in Section 586 multiplied by a factor of 10. If the sources approved T-RACT concentration is less than or equal to 10 times the applicable acceptable ambient concentration increment listed in Section 586, no further procedures for demonstrating preconstruction compliance will be required.

☐ If an application is submitted to the Department without T-RACT and determined complete, and T-RACT is later determined to be applicable the completeness determination of the application will be revoked until a supplemental application is submitted and determined complete. When the supplemental application is determined complete, the timeline for agency action shall be reinitiated (Section 210.13.b).

☐ If the Department determines that the source has proposed T-RACT, the Department shall develop emission standards to be incorporated into a permit to construct.

In some instances, the Department may consider a throughput limit or other inherently limiting operational restriction in a permit as an effective emission limit for the TAP, rather than a TAP-specific emissions limit.

H. TAP Compliance Using the Short Term Source Factor (Section 210.15)

☐ For short term sources, the applicant may utilize a short term adjustment factor of ten (10) only for a carcinogenic pollutant listed in Section 586. For a carcinogen listed in Section 586 multiply either the applicable acceptable ambient concentration increment or the screening emission rate (EL), but not both, by ten (10) to demonstrate preconstruction compliance (Section 210.15).

☐ A short term source is any new stationary source or modification to an existing source, with an operational life no greater than five (5) years from the inception of any operations to cessation of actual operations (Section 210.15).

I. TAP Compliance for Environmental Remediation Sources (Section 210.16)

☐ For remediation sources subject to or regulated by the Resource Conservation and Recovery Act and the Idaho Rules and Standard for Hazardous Waste, or the comprehensive Environmental Response, Compensation and Liability Act or a consent order, if the estimated ambient concentration is greater than the acceptable ambient impact increment listed in Section 585 and 586, Best Available Control Technology shall be applied and operated until the estimated uncontrolled emission from the remediation source are below the applicable acceptable ambient concentration increment (Section 210.16).

J. TAP Compliance Using Offset Ambient Concentration (Section 210.11)

☐ Contact the Department prior to proposing to utilize Offset Ambient Concentrations to demonstrate preconstruction compliance.

☐ Emission offsets must satisfy the requirements for emission reduction credits (Section 460).

- The proposed level of allowable emissions must be less than the actual emissions of the emissions units providing the offsets (Section 460.01).
- An air quality permit must be issued that restricts the potential to emit of the emission unit providing the offset.
- Emission reduction imposed by local, state or federal regulations or permits shall not be allowed.

☐ Compare the source's or modifications approved emission offset ambient concentration to the applicable acceptable ambient concentration listed in Section 585 and 586. If the source's or modifications approved offset concentration is less than the acceptable ambient concentration listed in Section 585 and 586, no further procedures for demonstrating preconstruction compliance will be required.

☐ The Department shall include emission limits and other permit terms for the toxic air pollutant in the permit to construct that will assure that the facility will be operated in the manner described in the preconstruction compliance demonstration (Section 210.10.d).

Chemical Calculations	* = not on Toxic Air Pollutant 585 or 586 List	% of ingredient	x weight of chemical	x Rated capacity of spray gun in gal/hr	Emission Level	Below Regulatory Concern (10% of Allowable EL)	Total Emissions in tons per year	Hours of actual spraying of this chemical in hours/per year	Actual Total Emissions
3M 1357L Contact Adhesive (6.672 lbs/gal)									
	*Petroleum Distillate								
	Acetone	0.30	6.67	2.80	5.60	Yes - EL is 118	24.55	50	0.14
	Hexane	0.15	6.67	2.80	2.80		12.27	50	0.07
	*Polychloroprene				0.00			50	0.00
	*Magnesium Resinate				0.00			50	0.00
	Methyl Ethyl Ketone	0.13	6.67	2.80	2.43	Yes - EL is 39.3	10.63	50	0.06
	Toluene	0.07	6.67	2.80	1.31	Yes - EL is 25	5.73	50	0.03
Permacron MS Clearcoat 8180 (8.02 lbs/gal)								1000	0.00
	*Acrylic Resin				0.00			1000	0.00
	Butyl acetate	0.03	8.02	2.80	0.67	Yes - EL is 47.3	2.95	1000	0.34
	*Ethyl 3-ethoxy propionate				0.00			1000	0.00
	Ethylbenzene	0.11	8.02	2.80	2.47	Yes - EL is 29	10.82	1000	1.24
	*Ethylene glycol monobutyl acetate				0.00			1000	0.00
Permasolid HS Hardener 3309 Extra Fast (8.33 lb/gal)					0.00				0.00
	*1,2,4-trimethyl benzene				0.00			1000	0.00
	*1,3,5-trimethyl benzene				0.00			1000	0.00
	*Aliphatic polyisocyanate resin				0.00			1000	0.00
	*Armomatic hydrocarbon-B				0.00			1000	0.00
	Butyl acetate	0.27	8.33	2.80	6.30		27.58	1000	3.15
	Ethylbenzene	0.02	8.33	2.80	0.47	Yes - EL is 29	2.04	1000	0.23
	*Propylene glycol monomethyl ether acetate				0.00			1000	0.00
	Xylene	0.07	8.33	2.80	1.63	Yes - EL is 29	7.15	1000	0.82
Permasolid HS Hardener 3307 Express (8.24 lb/gal)									0.00
	*Aliphatic polyisocyanate resin				0.00			192	0.00
	*Armomatic hydrocarbon-B				0.00			192	0.00
	Butyl acetate	0.00	8.24	2.80	0.00			192	0.00
	Ethylbenzene	0.01	8.24	2.80	0.18	Yes - EL is 29	0.81	192	0.02
	*Propylene glycol monomethyl ether acetate				0.00			192	0.00
	Toluene	0.41	8.24	2.80	9.46		41.43	192	0.91
	Xylene	0.03	8.24	2.80	0.69	Yes - EL is 29	3.03	192	0.07
					0.00				
Permasolid HS Hardener 3310 Fast (8.33 lbs/gal)					0.00				0.00
	*1,2,4-trimethyl benzene				0.00			1000	0.00
	*1,3,5-trimethyl benzene				0.00			1000	0.00
	*Aliphatic polyisocyanate resin				0.00			1000	0.00
	*Armomatic hydrocarbon-B				0.00			1000	0.00
	Butyl acetate	0.27	8.33	2.80	6.30		27.58	1000	3.15
	Ethylbenzene	0.02	8.33	2.80	0.47	Yes - EL is 29	2.04	1000	0.23
	*Propylene glycol monomethyl ether acetate				0.00			1000	0.00
	Xylene	0.07	8.33	2.80	1.63	Yes - EL is 29	7.15	1000	0.82
					0.00				
Permacron MS Dura Plus 8580 Reducer/Solvent (7.34 lbs/gal)					0.00				0.00
	Butyl acetate	0.94	7.34	2.80	19.32		84.62	192	1.85
	Ethylbenzene	0.02	7.34	2.80	0.31	Yes - EL is 29	1.35	192	0.03
	Xylene	0.05	7.34	2.80	1.03	Yes - EL is 29	4.50	192	0.10
					0.00				
Hybond 36 Adhesive/Solvent (6.6 lbs.gal)					0.00			50	0
	Toluene	0.2	6.6	2.8	3.70		16.19	50	0.09
	Hexane	0.3	6.6	2.8	5.54		24.28	50	0.14
	*Hexane Isomers				0.00			50	0.00
	*Methylcyclopethane				0.00			50	0.00
	Acetone	0.22	6.6	2.8	4.07	Yes - EL is 119	17.81	50	0.10

				Total	13.58
Total Hexane	8.34	Total emissions in tons per year	334.52	Total Hexane	0.07
Total Toluene	14.47			Total Toluene	1.03
Total Butyl Acetate	32.59			Total Butyl Acetate	8.49
Total Xylene	4.98			Total Xylene	1.80
Total Acetone	9.67			Total Acetone	0.24
Total Ethyl Benzene	3.9			Total Ethyl Benzene	1.75

Name/Item Number	Material Coated	Solid lb/gal.	* max rate of spray gun	* % spray gun efficiency	* % spray booth filter efficiency	* Hours of Operation	lbs/hour	TPY	MSDS Attached?
Spies Hecker Permacron MS Clear Coat 8180 (29581800)	Wood/Fiberglass	3.65	2.8	0.35	0.01	1000	0.03577	0.017885	Yes
Spies Hecker Permasolid HS Hardener 3309 Extra Fast (29333091)	Wood/Fiberglass	0.72	2.8	0.35	0.01	1000	0.007056	0.003528	Yes
Spies Hecker Permasolid HS Hardener 3307 Express (29233307)	Wood/Fiberglass	3.65	2.8	0.35	0.01	192	0.03577	0.00343392	Yes
Spies Hecker Permasolid HS Hardener 3310 Fast (29133106/29233100)	Wood/Fiberglass	0.72	2.8	0.35	0.01	1000	0.007056	0.003528	Yes
Spies Hecker Permacron MS Dura Plus 8580 (29585805/29185807)	Wood/Fiberglass	0.44	2.8	0.35	0.01	192	0.004312	0.000413952	Yes
3M Scotch-Grip 1357-L High Performance Contact Adhesive	Fabric/Plastic	0	2.8	0.35	0.01	50	0	0	Yes
Henkel Corp. Hybond 36 (J9831D102)	Fabric/Plastic	1.05	2.8	0.35	0.01	50	0.01029	0.00025725	Yes
					Total	3484	0.100254	0.029046122	

Name/Item Number	Material Coated	VOC Gal.	* max rate of spray gun	* Hours of Operation	Tons per Year	MSDS Attached?
Spies Hecker Permacron MS Clear Coat 8180 (29581800)	Wood/Fiberglass	4.33	2.8	1000	6.06	Yes
Spies Hecker Permasolid HS Hardener 3309 Extra Fast (29333091)	Wood/Fiberglass	4.33	2.8	1000	6.06	Yes
Spies Hecker Permasolid HS Hardener 3307 Express (2923307)	Wood/Fiberglass	4.3	2.8	192	1.16	Yes
Spies Hecker Permasolid HS Hardener 3310 Fast (29133106/29233100)	Wood/Fiberglass	4.33	2.8	1000	6.06	Yes
Spies Hecker Permacron MS Dura Plus 8580 (29585805/29185807)	Wood/Fiberglass	7.34	2.8	192	1.97	Yes
3M Scotch-Grip 1357-L High Performance Contact Adhesive	Fabric/Plastic	4.08	2.8	50	0.29	Yes
Henkel Corp. Hybond 36 (J9831D102)	Fabric/Plastic	4.02	2.8	50	0.28	Yes
				Total VOC	21.88	

MATERIAL SAFETY DATA SHEET

3M
3M Center
St. Paul, Minnesota
55144-1000
1-800-364-3577 or (651) 737-6501 (24 hours)

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DIVISION: ENGINEERED ADHESIVES
TRADE NAME:
SCOTCH-GRIP(TM) 1357-L High Performance Contact Adhesive
ID NUMBER/U.P.C.:

62-1390-5530-5	00-21200-65348-3	62-1390-7530-3	-	- -
62-1390-7535-2	00-21200-64506-8	62-1390-8535-1	00-21200-22590-1	
62-1390-9535-0	00-21200-22591-8	62-1390-9536-8	00-21200-22592-5	

ISSUED: November 28, 2001
SUPERSEDES: May 24, 2001
DOCUMENT: 10-2791-1

1. INGREDIENT

INGREDIENT	C.A.S. NO.	PERCENT
✓PETROLEUM DISTILLATE	64742-88-7	30.0 - 40.0
*ACETONE	67-64-1	20.0 - 30.0
*HEXANE	110-54-3	5 - 15
✓POLYCHLOROPRENE	9010-98-4	7 - 13
✓MAGNESIUM RESINATE	68611-24-5	7 - 13
* METHYL ETHYL KETONE	78-93-3	7 - 13
* TOLUENE	108-88-3	3 - 7

This product contains the following toxic chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Emergency Planning and Community Right-To-Know Act of 1986 and 40 CFR Part 372:
HEXANE
METHYL ETHYL KETONE
TOLUENE

2. PHYSICAL DATA

BOILING POINT:..... 132.00 F
(Acetone)
VAPOR PRESSURE:..... 180.0000 mmHg
@68F
VAPOR DENSITY:..... 3.00 Air=1
EVAPORATION RATE:..... > 2.00 Ether=1
SOLUBILITY IN WATER:..... slight
SPECIFIC GRAVITY:..... 0.800 Water=1

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

2. PHYSICAL DATA (continued)

PERCENT VOLATILE:..... ca. 81.00 % by wt
pH:..... N/D
VISCOSITY:..... ca. 50.0 centipoise
MELTING POINT:..... N/D

APPEARANCE AND ODOR:
thin liquid,, grey/green, sweet/sour odor.

3. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:..... -14.00 F TCC
(Petroleum Distillate)
FLAMMABLE LIMITS - LEL:..... 1.00 % by vol
FLAMMABLE LIMITS - UEL:..... 12.80 % by vol
AUTOIGNITION TEMPERATURE:..... N/D

EXTINGUISHING MEDIA:
Water spray, Carbon dioxide, Dry chemical, Foam

SPECIAL FIRE FIGHTING PROCEDURES:
Wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

UNUSUAL FIRE AND EXPLOSION HAZARDS:
Closed containers exposed to heat from fire may build pressure and explode.

NFPA HAZARD CODES: HEALTH: 2 FIRE: 4 REACTIVITY: 0
UNUSUAL REACTION HAZARD: none

4. REACTIVITY DATA

STABILITY: Stable

INCOMPATIBILITY - MATERIALS/CONDITIONS TO AVOID:
Heat.

HAZARDOUS POLYMERIZATION: Hazardous polymerization will not occur.

HAZARDOUS DECOMPOSITION PRODUCTS:
Carbon Monoxide and Carbon Dioxide, Hydrogen Chloride, Phosgene, Chlorine.

5. ENVIRONMENTAL INFORMATION

SPILL RESPONSE:
Refer to other sections of this MSDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment. Extinguish all ignition sources. Contain spill. Cover with absorbent material. Collect spilled material. Collect using non-sparking tools. Place in an approved metal container.

RECOMMENDED DISPOSAL:
Incinerate in an industrial or commercial facility. Dispose of waste product in a facility permitted to accept chemical waste.

ENVIRONMENTAL DATA:
No data available.

4.08/1gal
1.02kg/.264 gal

REGULATORY INFORMATION:
Volatile Organic Compounds: 464 gms/liter calculated per SCAQMD rule 443.1.
Volatile Organic Compounds: ca. 58 %.
VOC Less H2O & Exempt Solvents: 608 gms/liter calculated per SCAQMD rule 443.1.

Since regulations vary, consult applicable regulations or authorities before disposal. U.S. EPA Hazardous Waste Number = D001 (Ignitable)

EPCRA HAZARD CLASS:
FIRE HAZARD: Yes PRESSURE: No REACTIVITY: No ACUTE: Yes CHRONIC: Yes

6. SUGGESTED FIRST AID

EYE CONTACT:
Immediately flush eyes with large amounts of water. Get immediate medical attention.

SKIN CONTACT:
Flush skin with large amounts of water. If irritation persists, get medical attention.

INHALATION:
Remove person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, get immediate medical attention.

IF SWALLOWED:
If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

7. PRECAUTIONARY INFORMATION

EYE PROTECTION:
Avoid eye contact. Wear vented goggles.

SKIN PROTECTION:
Avoid skin contact. Wear appropriate gloves when handling this material.

RECOMMENDED VENTILATION:
Provide sufficient ventilation to maintain emissions below recommended exposure limits. If exhaust ventilation is not adequate, use appropriate respiratory protection.

RESPIRATORY PROTECTION:
Avoid prolonged breathing of vapors. Select one of the following NIOSH approved respirators based on airborne concentration of contaminants and in accordance with OSHA regulations: half-mask organic vapor respirator.

PREVENTION OF ACCIDENTAL INGESTION:
Do not ingest.

RECOMMENDED STORAGE:
Keep container closed when not in use. Keep out of the reach of children.

FIRE AND EXPLOSION AVOIDANCE:
Keep container tightly closed. Keep away from heat, sparks, open flame, and other sources of ignition. Extremely flammable liquid and vapor. Vapors may ignite explosively.

EXPOSURE LIMITS

INGREDIENT	VALUE	UNIT	TYPE	AUTH	SKIN*
PETROLEUM DISTILLATE.....	100	PPM	TWA	CMRG	
ACETONE.....	500	PPM	TWA	ACGIH	
ACETONE.....	750	PPM	STEL	ACGIH	
ACETONE.....	750	PPM	TWA	OSHAV	
	OSHA VACATED PEL				
ACETONE.....	1000	PPM	STEL	OSHAV	
	OSHA VACATED PEL				
ACETONE.....	1000	PPM	TWA	OSHA	
HEXANE.....	50	PPM	TWA	ACGIH	Y
HEXANE.....	50	PPM	TWA	OSHAV	
	OSHA VACATED PEL				
HEXANE.....	500	PPM	TWA	OSHA	
POLYCHLOROPRENE.....	NONE	NONE	NONE	NONE	
MAGNESIUM RESINATE.....	NONE	NONE	NONE	NONE	
METHYL ETHYL KETONE.....	200	PPM	TWA	OSHA	

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

EXPOSURE LIMITS (continued)

INGREDIENT	VALUE	UNIT	TYPE	AUTH	SKIN*
METHYL ETHYL KETONE.....	300	PPM	STEL	OSHA	
METHYL ETHYL KETONE.....	200	PPM	TWA	ACGIH	
METHYL ETHYL KETONE.....	300	PPM	STEL	ACGIH	
TOLUENE.....	50	PPM	TWA	ACGIH	Y
TOLUENE.....	100	PPM	TWA	OSHAV	
	OSHA VACATED PEL				
TOLUENE.....	150	PPM	STEL	OSHAV	
	OSHA VACATED PEL				
TOLUENE.....	200	PPM	TWA	OSHA	
TOLUENE.....	300	PPM	CEIL	OSHA	
TOLUENE.....	75	PPM	STEL	CMRG	Y

* SKIN NOTATION: Listed substances indicated with 'Y' under SKIN refer to the potential contribution to the overall exposure by the cutaneous route including mucous membrane and eye, either by airborne or, more particularly, by direct contact with the substance. Vehicles can alter skin absorption.

SOURCE OF EXPOSURE LIMIT DATA:
- ACGIH: American Conference of Governmental Industrial Hygienists
- CMRG: Chemical Manufacturer Recommended Exposure Guidelines
- OSHA: Occupational Safety and Health Administration
- OSHAV: Occupational Safety and Health Administration Vacated PEL. Vacated Permissible Exposure Limits (PEL) are enforced as the OSHA PEL in some states. Check with your local regulatory authority.

- NONE: None Established

8. HEALTH HAZARD DATA

EYE CONTACT:
Mild Eye Irritation: signs/symptoms can include redness, swelling, pain, and tearing.

SKIN CONTACT:
Mild Skin Irritation: signs/symptoms can include redness, swelling, and itching.

May be absorbed through the skin and produce effects similiar to those caused by inhalation and/or ingestion.

INHALATION:
Irritation (upper respiratory): signs/symptoms can include soreness of the nose and throat, coughing and sneezing.

Single overexposure, above recommended guidelines, may cause:

Central Nervous System Depression: signs/symptoms can include

8. HEALTH HAZARD DATA (continued)

headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.

WHILE THE FOLLOWING EFFECTS ARE ASSOCIATED WITH ONE OR MORE OF THE INDIVIDUAL INGREDIENTS IN THIS PRODUCT AND ARE REQUIRED TO BE INCLUDED ON THE MSDS BY THE U.S. OSHA HAZARD COMMUNICATION STANDARD, THEY ARE NOT EXPECTED EFFECTS DURING FORESEEABLE USE OF THIS PRODUCT.

Peripheral Neuropathy: signs/symptoms can include tingling of extremities, incoordination, numbness, weakness and tremors.

IF SWALLOWED:
Ingestion may cause:

Irritation of Gastrointestinal Tissues: signs/symptoms can include pain, vomiting, abdominal tenderness, nausea, blood in vomitus, and blood in feces.

WHILE THE FOLLOWING EFFECTS ARE ASSOCIATED WITH ONE OR MORE OF THE INDIVIDUAL INGREDIENTS IN THIS PRODUCT AND ARE REQUIRED TO BE INCLUDED ON THE MSDS BY THE U.S. OSHA HAZARD COMMUNICATION STANDARD, THEY ARE NOT EXPECTED EFFECTS DURING FORESEEABLE USE OF THIS PRODUCT.

Ingestion may cause:

Aspiration Pneumonitis: signs/symptoms can include coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal.

REPRODUCTIVE/DEVELOPMENTAL TOXINS:
WARNING: Contains a chemical which can cause birth defects. (108-88-3)

SECTION CHANGE DATES

PRECAUTIONARY INFO. SECTION CHANGED SINCE May 24, 2001 ISSUE

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Spies Hecker Material Safety Data Sheet
Spies Hecker® Clear Coats

SECTION 1 - Identification of the substance/preparation and of the company/undertaking

Manufacturer: Spies Hecker
47818 W. Anchor Ct.
Plymouth, MI, 48170

Telephone:

Product information:	(888) 371-3313
Medical emergency:	(800) 441-3637
Transportation emergency:	(800) 424-9300 (CHEMTREC)

Product: **1 - Spies Hecker® Clear Coats**

Products covered in this document include: Permasolid® HS Optimum Clear Coat 8600 (295 8600 0), Permasolid® HS Diamond Clear Coat 8450 (295 8450 0), Permacron® MS Clear Coat 8180 (295 8180 0), Permacron® MS Clear Coat 8110 (295 8110 9), Permacron® 2.1 Clear Coat 8097 (295 8097 5), Permacron® 2.1 Clear Coat 8095 (295 8095 1), Permasolid® HS Clear Coat 8035 (295 8035 0), Permasolid® HS Clear Coat 8030 (295 8030 7/292 8030 3), Permacryl® One Pack Clear Coat 8020 (295 8020 0), Permacron® MS Clear Coat 8015 (295 8015 3), Permacron® MS Vario Clear Coat 8000 (295 8000 5), Permacron® Semi-gloss Elastic Clear Coat 8070 (291 8070 8)

DOT Shipping Name: See DOT Addendum.

Hazardous Materials Information: See Section 10.

SECTION 2 - Composition/information on ingredients

INGREDIENTS	CAS #	VAPOR PRESSURE	EXPOSURE LIMITS
1,2,4-trimethyl benzene	95-63-6	7.0@44.4°C	A 25.0 ppm O 25.0 ppm
1,3,5-trimethyl benzene	108-67-8	None	A 25.0 ppm O None
4-chlorobenzotrifluoride	98-56-6	7.6@25.0°C	D 20.0 ppm 8 & 12 hour TWA A None O None
Acetone	67-64-1	247.0@68.0°F	A 750.0 ppm 15 min STEL A 500.0 ppm O 1000.0 ppm D 500.0 ppm 8 & 12 hour TWA
Acrylic polymer-A	NotAvail	None	A None O None
Acrylic polymer-B	141785-74-2	None	A None O None
Acrylic polymer-C	162568-42-5	None	A None O None
Acrylic resin	NotAvail	None	A None O None
Amorphous silica - precipitated	112926-00-8	None	A 10.0 mg/m3 D 3.0 mg/m3 Respirable Dust O None
Aromatic hydrocarbon	64742-95-6	10.0@25.0°C	D 50.0 ppm A None O None
Butyl acetate	123-86-4	10.0	A 200.0 ppm 15 min STEL A 150.0 ppm O 150.0 ppm
Carbamate resin	26935-10-4	None	A None O None
Cellulose acetate butyrate	9004-36-8	<0.0	A None O None
Ethoxypropyl acetate	98516-30-4	0.2	A None O None
Ethyl 3-ethoxy propionate	763-69-9	1.1@25.0°C	A None O None
Ethyl acetate	141-78-6	93.2@25.0°C	A 400.0 ppm O 400.0 ppm
Ethylbenzene	100-41-4	7.0	A 125.0 ppm 15 min STEL A 100.0 ppm O 100.0 ppm D 25.0 ppm 8 & 12 hour TWA
Ethylene glycol monobutyl ether acetate	112-07-2	0.3	A 20.0 ppm D 20.0 ppm 8 & 12 hour TWA O None
Hydrotreated heavy naphtha (petroleum)	64742-48-9	1.0@68.0°F	A 100.0 ppm O 500.0 ppm D 100.0 ppm
Isopropyl alcohol	67-63-0	48.0	A 400.0 ppm 15 min STEL A 200.0 ppm O 400.0 ppm D 200.0 ppm 8 & 12 hour TWA
Methyl amyl ketone	110-43-0	3.4	A 50.0 ppm O 100.0 ppm
Methyl ethyl ketone	78-93-3	71.2	A 300.0 ppm 15 min STEL A 200.0 ppm O 200.0 ppm D 300.0 ppm 15 min TWA D 200.0 ppm 8 & 12 hour TWA

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INGREDIENTS	CAS #	VAPOR PRESSURE	EXPOSURE LIMITS
Methyl isobutyl ketone	108-10-1	15.1	A 75.0 ppm 15 min STEL A 50.0 ppm O 100.0 ppm
Naphtha (petroleum), hydrodesulfurized heavy	64742-82-1	None	A None O None
Polyacrylic resin-A	NotAvail	None	A None O None
Polyacrylic resin-B	26985-11-5	None	A None O None
Polyacrylic resin-C	30795-64-3	None	A None O None
Polycaprolactone oligomer	35484-93-6	None	A None O None
Polyester resin-A	NotAvail	None	A None O None
Polyester resin-B	129922-22-1	None	A None O None
Propylene glycol monomethyl ether acetate	108-65-6	3.8	D 10.0 ppm 8 & 12 hour TWA A None O None
Substituted benzotriazole	127519-17-9	0.1	S 4.0 mg/m3 A None O None
Toluene	108-88-3	29.0	A 20.0 ppm O 300.0 ppm CEIL O 500.0 ppm 10 min TWA O 200.0 ppm D 50.0 ppm 8 & 12 hour TWA
Ultraviolettabsorber	NotAvail	0.0@25.0°C	A None O None
Xylene	1330-20-7	8.0@25.0°C	A 150.0 ppm 15 min STEL A 100.0 ppm O 100.0 ppm D 150.0 ppm 15 min STEL D 100.0 ppm 8 & 12 hour TWA

SECTION 3 - Hazards identification

Potential Health Effects:
Inhalation:
May cause nose and throat irritation. May cause nervous system depression, characterized by the following progressive steps: headache, dizziness, nausea, staggering gait, confusion, unconsciousness. Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage. If this product contains or is mixed with an isocyanate activator/hardener, the following health effects may apply: Exposure to isocyanates may cause respiratory sensitization. This effect may be permanent. Symptoms include an asthma-like reaction with shortness of breath, wheezing, cough or permanent lung sensitization. This effect may be delayed for several hours after exposure. Repeated overexposure to isocyanates may cause a decrease in lung function, which may be permanent. Individuals with lung or breathing problems or prior reactions to isocyanates must not be exposed to vapors or spray mist of this product.

Ingestion:
May result in gastrointestinal distress.

Skin or eye contact:
May cause irritation or burning of the eyes. Repeated or prolonged liquid contact may cause skin irritation with discomfort and dermatitis.

Other Potential Health Effects in addition to those listed above:
4-chlorobenzotrifluoride
Increased susceptibility to the effects of this material may be observed in people with preexisting disease of any of the following: skin. Prolonged or repeated exposure may cause damage to any of the following organs/systems: kidneys, liver, thyroid. Potential skin sensitizer that may cause allergic reactions and contact dermatitis resulting in severe irritation, dryness, and cracking of the skin. Ingestion may cause any of the following: gastrointestinal irritation. Eye contact may cause any of the following: permanent eye injury. Inhalation may cause any of the following: stupor (central nervous system depression), respiratory tract irritation.

Acetone
The following medical conditions may be aggravated by exposure: lung disease, eye disorders, skin disorders. Overexposure may cause damage to any of the following organs/systems: blood, central nervous system, eyes, kidneys, liver, respiratory system, skin.

Acrylic polymer-A
Eye contact may cause any of the following: irritation.

Aromatic hydrocarbon
The following medical conditions may be aggravated by exposure: skin disorders. Laboratory studies with rats have shown that petroleum distillates can cause kidney damage and kidney or liver tumors. These effects were not seen in similar studies with guinea pigs, dogs, or monkeys. Several studies evaluating petroleum workers have not shown a significant increase of kidney damage or an increase in kidney or liver tumors.

Butyl acetate
May cause abnormal liver function. The following medical conditions may be aggravated by exposure: respiratory system. Tests for embryotoxic activity in animals has been inconclusive. Rats exposed to very high airborne levels have exhibited high frequency hearing deficits. The significance of this to man is unknown. Has been toxic to the fetus in laboratory animals at doses that are toxic to the mother.

Ethyl acetate
Increased susceptibility to the effects of this material may be observed in people with preexisting disease of any of the following: eyes, respiratory system, skin. Tests in laboratory animals have shown effects on any of the following organs/systems: blood, kidneys, liver.

Ethylbenzene
Is an IARC, NTP or OSHA carcinogen. Increased susceptibility to the effects of this material may be observed in people with preexisting disease of any of the following: central nervous system, kidneys, liver, lungs. Recurrent overexposure may result in liver and kidney injury. Studies in laboratory animals have shown reproductive, embryotoxic and developmental effects.
WARNING: This chemical is known to the State of California to cause

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cancer.

Ethylene glycol monobutyl ether acetate
May destroy red blood cells. May cause abnormal kidney function. May cause temporary upper respiratory and/or lung irritation with cough, difficult breathing, or shortness of breath. The following medical conditions may be aggravated by exposure: central nervous system, gastrointestinal system, kidneys, liver, dermatitis. Can be absorbed through the skin in harmful amounts. Overexposure may cause damage to any of the following organs/systems: blood, kidneys, liver. Ingestion may cause headache, nausea, vomiting, dizziness, and drowsiness.

Hydrotreated heavy naphtha (petroleum)
Laboratory studies with rats have shown that petroleum distillates can cause kidney damage and kidney or liver tumors. These effects were not seen in similar studies with guinea pigs, dogs, or monkeys. Several studies evaluating petroleum workers have not shown a significant increase of kidney damage or an increase in kidney or liver tumors.

Isopropyl alcohol
The following medical conditions may be aggravated by exposure: dermatitis, respiratory disease. Developmental toxicity was seen in rat's offspring at doses that were maternally toxic. Contact will cause moderate to severe redness and swelling, itching, tingling sensation, painful burning. May cause injury to the cornea of the eyes. Prolonged or repeated exposure may cause damage to any of the following organs/systems: liver. Ingestion studies on laboratory animals showed that very high oral doses caused increased liver and kidney weights.

Methyl ethyl ketone
Material is irritating to mucous membranes and upper respiratory tract. Increased susceptibility to the effects of this material may be observed in people with preexisting disease of any of the following: central nervous system, eyes, respiratory system, skin. Prolonged or repeated overexposure may cause any of the following: conjunctivitis, dermatitis. High concentrations have caused embryotoxic effects in laboratory animals. Aspiration may occur during swallowing or vomiting, resulting in lung damage. Ingestion may cause headache, nausea, vomiting, dizziness, and drowsiness.

Methyl isobutyl ketone
The following medical conditions may be aggravated by exposure: asthma, respiratory disease, eye disorders, pulmonary conditions, skin disorders. Repeated or prolonged skin contact may cause any of the following: dryness, cracking of the skin, defatting. Inhalation may cause any of the following: dizziness, stupor (central nervous system depression), drowsiness, respiratory tract irritation.

Propylene glycol monomethyl ether acetate
Recurrent overexposure may result in liver and kidney injury.

Substituted benzotriazole
The following medical conditions may be aggravated by exposure: jaundice, liver disease. Tests in laboratory animals have shown effects on any of the following organs/systems: blood, kidneys, liver, thyroid, upper respiratory system.

Toluene
Increased susceptibility to the effects of this material may be observed in people with preexisting disease of any of the following: central nervous system, kidneys, liver, respiratory system, skin. Can be absorbed through the skin in harmful amounts. Recurrent overexposure may result in liver and kidney injury. High airborne levels have produced irregular heart beats in animals and occasional palpitations in humans. Rats exposed to very high airborne levels have exhibited high frequency hearing deficits. The significance of this to man is unknown.
WARNING: This chemical is known to the State of California to cause birth defects or other reproductive harm.

Xylene
Increased susceptibility to the effects of this material may be observed in people with preexisting disease of any of the following: bone marrow, cardiovascular system, central nervous system, kidneys, liver, lungs. Recurrent overexposure may result in liver and kidney injury. High exposures may produce irregular heart beats. Canada classifies Xylene as a developmental toxin as high exposures to xylenes in some animal studies have been reported to cause health effects on the developing fetus/embryo. These effects were often at levels toxic to the adult animal. The significance of these effects to humans is not known. Repeated or prolonged skin contact may cause any of the following: irritation, dryness, cracking of the skin.

SECTION 4 - First aid measures

First Aid Procedures:
Inhalation:
If affected by inhalation of vapor or spray mist, move to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing difficulty persists, or occurs later, consult a physician.

Ingestion:
In the unlikely event of ingestion, DO NOT INDUCE VOMITING. Call a physician immediately and have names of ingredients available.

Skin or eye contact:
In case of eye contact, immediately flush with plenty of water for at least 15 minutes; call a physician. In case of skin contact, wash thoroughly with soap and water. If irritation occurs, contact a physician.

SECTION 5 - Fire-fighting measures

Flash Point (Closed Cup): See Section 11 for exact values.

Flammable Limits: LFL 0.9 % UFL 12.8 %

Extinguishing Media:
Universal aqueous film-forming foam, carbon dioxide, dry chemical.

Fire Fighting Procedures:
Full protective equipment, including self-contained breathing apparatus, is recommended. Water from fog nozzles may be used to prevent pressure build-up.

Fire and Explosion Hazards :
For flammable liquids, vapor/air will ignite when an ignition source is present. In other cases, when heated above the flash point, emits flammable vapors which, when mixed with air, can burn or be explosive. Fine mists or sprays may be flammable at temperatures below the flash point.

SECTION 6 - Accidental release measures

Procedures for cleaning up spills or leaks:
Ventilate area. Remove sources of ignition. Prevent skin and eye contact and breathing of vapor. If material does not contain or is not mixed with an isocyanate activator/hardener: Wear a properly fitted air-purifying respirator with organic vapor cartridges (NIOSH approved TC-23C), eye protection, gloves and protective clothing. Confine, remove with inert absorbent, and dispose of properly. If the material contains, or is mixed with an isocyanate activator/hardener: Wear a positive-pressure, supplied-air respirator (NIOSH approved TC-19C), eye protection, gloves and protective clothing. Pour liquid decontamination solution over the spill and allow to sit at least 10 minutes. Typical decontamination solutions for isocyanate containing materials are: 20% Surfactant (Tergitol TMN 10) and

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80% Water OR 0-10% Ammonia, 2-5% Detergent and Water (balance). Pressure can be generated. Do not seal waste containers for 48 hours to allow C02 to vent. After 48 hours, material may be sealed and disposed of properly.

SECTION 7 - Handling and storage

Precautions to be taken in handling and storing:
Observe label precautions. If combustible (flashpoint between 100 - 200 deg F), keep away from heat, sparks and flame. If flammable (flashpoint less than 100 deg F), also keep away from static discharges and other sources of ignition. If material is extremely flammable (flashpoint less than 20 deg F) or flammable, VAPORS MAY IGNITE EXPLOSIVELY OR CAUSE FLASH FIRE, respectively. Vapors may spread long distances. Prevent buildup of vapors. Close container after each use. Ground containers when pouring. Wash thoroughly after handling and before eating or smoking. Do not store above 120 deg F. If product is waterbased, do not freeze.

Other precautions:
If material is a coating: do not sand, flame cut, braze or weld dry coating without a NIOSH approved air purifying respirator with particulate filters or appropriate ventilation , and gloves.

SECTION 8 - Exposure controls / personal protection

Engineering controls and work practices:
Ventilation
Provide sufficient ventilation in volume and pattern to keep contaminants below applicable exposure limits.

Respiratory protection
Do not breathe vapors or mists. If this product contains isocyanates or is used with an isocyanate activator/hardener, wear a positive-pressure, supplied-air respirator (NIOSH approved TC-19C) while mixing activator/hardener with paint, during application and until all vapors and spray mist are exhausted. If product does not contain or is not mixed with an isocyanate activator/hardener, a properly fitted air-purifying respirator with organic vapor cartridges (NIOSH TC-23C) and particulate filter (NIOSH TC-84A) may be used. Follow respirator manufacturer s directions for respirator use. Do not permit anyone without protection in the painting area. Individuals with history of lung or breathing problems or prior reaction to isocyanates should not use or be exposed vapor or spray mist if product contains or is mixed with isocyanate activators/hardeners.

Protective equipment
Personal protective equipment should be worn to prevent contact with eyes, skin or clothing.

Skin protection
Neoprene gloves and coveralls are recommended.

Eye protection
Desirable in all industrial situations. Goggles are preferred to prevent eye irritation. If safety glasses are substituted, include splash guard or side shields.

SECTION 9 - Physical and chemical properties

Evaporation rate	Slower than Ether
Water solubility	NIL
Vapour density	Heavier than air
Approx. Boiling Range (°C)	56.1 - 190 °C
Approx. Freezing Range (°C)	-95 - -35.9 °C
Gallon Weight (lbs/gal)	7.36 - 8.91
Specific Gravity	0.88 - 1.07
Percent Volatile By Volume	46.69 - 86.96
Percent Volatile By Weight	40.97 - 83.14
Percent Solids By Volume	13.04 - 53.31
Percent Solids By Weight	16.87 - 59.03

SECTION 10 - Stability and reactivity

Stability:
Stable

Incompatibility (materials to avoid):
None reasonably foreseeable

Hazardous decomposition products:
CO, C02, smoke, and oxides of any heavy metals that are reported in "Composition, Information on Ingredients" section.

Hazardous Polymerization:
Will not occur.

Sensitivity to Static Discharge:
For flammable materials (flashpoint less than 100 deg F) and combustibles (flashpoint between 100-200 deg F) if heated above the flashpoint, solvent vapors in air may explode if static grounding and bonding is not used during transfer of this product.

Sensitivity to Mechanical Impact:
None known.

SECTION 11 - Additional Information

291 8070 8™ 1,2,4-trimethyl benzene(2%*), Acrylic resin, Amorphous silica - precipitated, Aromatic hydrocarbon, Butyl acetate, Ethylbenzene(0.7 - 1.7%*@), Polyester resin-A, Propylene glycol monomethyl ether acetate, Xylene(5 - 6%*@)
GAL WT: 8.67 WT PCT SOLIDS: 51.29 VOL PCT SOLIDS: 42.71
SOLVENT DENSITY: 7.36 VOC LE: 4.2 VOC AP: 4.2
FLASH POINT: 73°F to below 100°F H: 2 F: 3 R: 0 OSHA STORAGE: IC
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: YES

295 8600 0™ 1,2,4-trimethyl benzene(4%*), Acrylic resin, Aromatic hydrocarbon, Butyl acetate, Ethylbenzene(0.3 - 0.8%*@), Methyl amyl ketone, Polyester resin-A, Xylene(3 - 3%*@)
GAL WT: 7.97 WT PCT SOLIDS: 47.64 VOL PCT SOLIDS: 40.46
SOLVENT DENSITY: 6.99 VOC LE: 4.2 VOC AP: 4.2
FLASH POINT: 100°F - 141°F H: 2 F: 2 R: 0 OSHA STORAGE: II
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: YES

295 8450 0™ 1,2,4-trimethyl benzene(3%*), Acrylic resin, Aromatic hydrocarbon, Butyl acetate, Ethylbenzene(0.4 - 1.0%*@), Methyl amyl ketone, Polycaprolactone oligomer, Polyester resin-A, Xylene(3 - 4%*@)
GAL WT: 7.99 WT PCT SOLIDS: 49.33 VOL PCT SOLIDS: 42.05
SOLVENT DENSITY: 7.33 VOC LE: 4.0 VOC AP: 4.0
FLASH POINT: 100°F - 141°F H: 2 F: 2 R: 0 OSHA STORAGE: II
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: YES

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295 8180 0™ Acrylic resin, Butyl acetate, Ethyl 3-ethoxy propionate, Ethylbenzene(4.5 - 11.3%*@), Ethylene glycol monobutyl ether acetate(3%*@), Xylene(34 - 41%*@)
GAL WT: 8.02 WT PCT SOLIDS: 45.99 VOL PCT SOLIDS: 40.51
SOLVENT DENSITY: 7.27 VOC LE: 4.3 VOC AP: 4.3
FLASH POINT: 73°F to below 100°F H: 2 F: 3 R: 0 OSHA STORAGE: IC
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: YES

295 8110 9™ 1,2,4-trimethyl benzene(5%*), 1,3,5-trimethyl benzene, Aromatic hydrocarbon, Butyl acetate, Cellulose acetate butyrate, Ethyl acetate, Ethylbenzene(0.8 - 2.1%*@), Polyacrylic resin-A, Xylene(7 - 8%*@)
GAL WT: 8.37 WT PCT SOLIDS: 56.23 VOL PCT SOLIDS: 50.27
SOLVENT DENSITY: 7.34 VOC LE: 3.7 VOC AP: 3.7
FLASH POINT: 20°F to below 73°F H: 2 F: 3 R: 0 OSHA STORAGE: IB
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: YES

295 8097 5™ 4-chlorobenzotrifluoride, Acetone, Acrylic polymer-B, Acrylic resin, Butyl acetate, Methyl amyl ketone, Polyester resin-B, Substituted benzotriazole
GAL WT: 8.87 WT PCT SOLIDS: 52.28 VOL PCT SOLIDS: 50.03
SOLVENT DENSITY: 8.48 VOC LE: 2.25 VOC AP: 1.7
FLASH POINT: 20°F to below 73°F H: 1 F: 3 R: 1 OSHA STORAGE: IB
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: NO

295 8095 1™ 4-chlorobenzotrifluoride, Acetone, Acrylic polymer-B, Methyl amyl ketone, Polyester resin-A
GAL WT: 8.91 WT PCT SOLIDS: 49.86 VOL PCT SOLIDS: 47.31
SOLVENT DENSITY: 8.48 VOC LE: 2.28 VOC AP: 1.6
FLASH POINT: 20°F to below 73°F H: 2 F: 3 R: 1 OSHA STORAGE: IB
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: NO

295 8035 0™ 1,2,4-trimethyl benzene(5%*), 1,3,5-trimethyl benzene, Acrylic polymer-C, Acrylic resin, Aromatic hydrocarbon, Butyl acetate, Ethylbenzene(0.2 - 0.4%*@), Methyl amyl ketone, Polyester resin-A, Xylene(1 - 2%*@)
GAL WT: 8.27 WT PCT SOLIDS: 58.05 VOL PCT SOLIDS: 50.83
SOLVENT DENSITY: 7.03 VOC LE: 3.45 VOC AP: 3.45
FLASH POINT: 100°F - 141°F H: 2 F: 2 R: 0 OSHA STORAGE: II
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: YES

295 8030 7/292 8030 3™ 1,2,4-trimethyl benzene(6%*), 1,3,5-trimethyl benzene, Aromatic hydrocarbon, Butyl acetate, Ethoxypropyl acetate, Ethylbenzene(0.9 - 2.4%*@), Polyacrylic resin-A, Xylene(7 - 9%*@)
GAL WT: 8.43 WT PCT SOLIDS: 59.03 VOL PCT SOLIDS: 53.31
SOLVENT DENSITY: 7.35 VOC LE: 3.47 VOC AP: 3.47
FLASH POINT: 100°F - 141°F H: 2 F: 2 R: 0 OSHA STORAGE: II
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: YES

295 8020 0™ 1,2,4-trimethyl benzene(7%*), 1,3,5-trimethyl benzene, Aromatic hydrocarbon, Carbamate resin, Ethylbenzene(1.3 - 3.2%*@), Isopropyl alcohol, Methyl ethyl ketone, Naphtha (petroleum), hydrodesulfurized heavy, Polyacrylic resin-C, Propylene glycol monomethyl ether acetate, Toluene(21 - 21%*@), Xylene(10 - 12%*@)
GAL WT: 7.36 WT PCT SOLIDS: 16.87 VOL PCT SOLIDS: 13.04
SOLVENT DENSITY: 7.04 VOC LE: 6.1 VOC AP: 6.1
FLASH POINT: 20°F to below 73°F H: 2 F: 3 R: 0 OSHA STORAGE: IB
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: YES

295 8015 3™ Acrylic polymer-A, Acrylic resin, Butyl acetate, Ethylbenzene(2.7 - 6.6%*@), Hydrotreated heavy naphtha (petroleum), Methyl amyl ketone, Methyl isobutyl ketone(3%*@), Polyester resin-A, Ultraviolettabsorber, Xylene(20 - 24%*@)
GAL WT: 8.07 WT PCT SOLIDS: 49.43 VOL PCT SOLIDS: 42.81
SOLVENT DENSITY: 7.11 VOC LE: 4.08 VOC AP: 4.08
FLASH POINT: 73°F to below 100°F H: 2 F: 3 R: 0 OSHA STORAGE: IC
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: YES

295 8000 5™ 1,2,4-trimethyl benzene(6%*), 1,3,5-trimethyl benzene, Aromatic hydrocarbon, Butyl acetate, Ethylbenzene(0.6 - 1.5%*@), Polyacrylic resin-B, Xylene(5 - 6%*@)
GAL WT: 8.13 WT PCT SOLIDS: 44.47 VOL PCT SOLIDS: 38.35
SOLVENT DENSITY: 7.30 VOC LE: 4.5 VOC AP: 4.5
FLASH POINT: 73°F to below 100°F H: 2 F: 3 R: 0 OSHA STORAGE: IC
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: YES

Footnotes:
TSCA: In compliance = In compliance with TSCA Inventory requirements for commercial purposes.
* = Section 313 Supplier Notification: These chemicals are subject to the reporting requirements of Section 313 of the Emergency planning and Right-to-Know act of 1986 and of 40 CFR 372.
@ = Listed as a Clean Air Act Hazardous Air Pollutant.
# = EPCRA Section 302 - Extremely hazardous substances.

Notice:
The information on this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

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Spies Hecker Material Safety Data Sheet
Spies Hecker® Hardeners/Activators

SECTION 1 - Identification of the substance/preparation and of the company/undertaking

Manufacturer: Spies Hecker
47818 W. Anchor Ct.
Plymouth, MI, 48170

Telephone:
Product information: (888) 371-3313
Medical emergency: (800) 441-3637
Transportation emergency: (800) 424-9300 (CHEMTREC)

Product: **9 - Spies Hecker® Hardeners/Activators**

Products covered in this document include: Permasolid® HS Hardener 3309 Extra Fast (293 3309 1), Permasolid® HS Hardener 3325 Extra Slow (292 3325 9), Permasolid® HS Hardener 3307 Express (292 3307 0), Permacron® Hardener 3199 Extra Slow (292 3199 0), Permacron® Hardener 3197 Slow (292 3197 0), Permacron® Hardener 3195 Medium (292 3195 7), Permacron® Hardener 3193 Fast (292 3193 0), Priomat® Activator 4076 (291 4076 1), Priomat® Activator 4076 (291 4076 0), Permasolid® HS Hardener 3320 Slow (291 3320 3/292 3320 8), Permasolid® HS Hardener 3315 Medium (291 3315 7/292 3315 1), Permasolid® HS Hardener 3310 Fast (291 3310 6/292 3310 0), Permacron® Elastic Hardener 3301 (291 3301 7), Permasolid® VHS Hardener 3240 Slow (291 3240 0), Permasolid® VHS Hardener 3230 Medium (291 3230 0), Permasolid® VHS Hardener 3220 Express (291 3220 0), Permasolid® VHS Hardener 3170 (291 3170 7), Permacron® Super Hardener 3120 (291 3120 0), Raderal® Hardener 0909 (291 0909 4), Raderal® Hardener 9520 (290 9520 4), Permacron® Pre-Polyester Coat Hardener 3183 (290 3183 4)

DOT Shipping Name: See DOT Addendum.

Hazardous Materials Information: See Section 10.

SECTION 2 - Composition/information on ingredients

INGREDIENTS	CAS #	VAPOR PRESSURE	EXPOSURE LIMITS
1,2,4-trimethyl benzene	95-63-6	7.0@44.4°C	A 25.0 ppm O 25.0 ppm
1,2-benzenedicarboxylic acid, bis(2-methylpropyl) ester	84-69-5	None	A None O None
1,3,5-trimethyl benzene	108-67-8	None	A 25.0 ppm O None
1,6-hexamethylene diisocyanate	822-06-0	0.0@25.0°C	A 5.0 ppb O None
4-chlorobenzotrifluoride	98-56-6	7.6@25.0°C	D 20.0 ppm 8 & 12 hour TWA A None O None
Aliphatic polyisocyanate resin	28182-81-2	None	S 1.0 mg/m3 15 min STEL S 0.5 mg/m3 A None O None
Aromatic hydrocarbon-A	64742-94-5	150.0	D 100.0 ppm A None O None
Aromatic hydrocarbon-B	64742-95-6	10.0@25.0°C	D 50.0 ppm A None O None
Benzoyl peroxide	94-36-0	7.8	A None O None
Butyl acetate	123-86-4	10.0	A 200.0 ppm 15 min STEL A 150.0 ppm O 150.0 ppm
Carbamate resin	26935-10-4	None	A None O None
Chlorinated polyolefin	68442-33-1	None	A None O None
Cyclohexanone, peroxide	12262-58-7	None	A None O None
Diacetone alcohol	123-42-2	1.1@200.0°C	A 50.0 ppm TLV O 50.0 ppm TWA
Ethyl 3-ethoxy propionate	763-69-9	1.1@25.0°C	A None O None
Ethyl acetate	141-78-6	93.2@25.0°C	A 400.0 ppm O 400.0 ppm
Ethylbenzene	100-41-4	7.0	A 125.0 ppm 15 min STEL A 100.0 ppm O 100.0 ppm D 25.0 ppm 8 & 12 hour TWA
Ethylene glycol monobutyl ether acetate	112-07-2	0.3	A 20.0 ppm D 20.0 ppm 8 & 12 hour TWA O None
Glycol esters	112-07-2	0.4	A 130.0 mg/m3 D 10.0 ppm Skin D 20.0 ppm 8 & 12 hour TWA O None
Isobutyl alcohol	78-83-1	9.7@22.0°C	A 50.0 ppm O 100.0 ppm
Isophorone diisocyanate homopolymer	53880-05-0	None	A None O None
Methyl acetate	79-20-9	215.9	A 250.0 ppm 15 min STEL A 200.0 ppm O 200.0 ppm

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INGREDIENTS	CAS #	VAPOR PRESSURE	EXPOSURE LIMITS
Modified chlorinated polyolefin	68609-36-9	None	A None O None
N-butyl alcohol	71-36-3	5.6@68.0°F	A 20.0 ppm O 100.0 ppm D 50.0 ppm 15 min TWA D 25.0 ppm
N-propanol	71-23-8	19.0	A 400.0 ppm 15 min STEL A 200.0 ppm Skin O 250.0 ppm 15 min STEL O 200.0 ppm Skin
Phosphoric acid	7664-38-2	2.0	A 3.0 mg/m3 15 min STEL A 1.0 mg/m3 O 1.0 mg/m3 D 1.0 mg/m3 8 & 12 hour TWA
Phthalates	131-11-3	0.0@100.0°C	A 5.0 mg/m3 O 5.0 mg/m3
Propylene glycol methyl ether	107-98-2	11.2@77.0°F	A 150.0 ppm 15 min STEL A 100.0 ppm O None
Propylene glycol monomethyl ether acetate	108-65-6	3.8	D 10.0 ppm 8 & 12 hour TWA A None O None
Toluene	108-88-3	29.0	A 20.0 ppm O 300.0 ppm CEIL O 500.0 ppm 10 min TWA O 200.0 ppm D 50.0 ppm 8 & 12 hour TWA
Treated amorphous fumed silica	67762-90-7	None	A 10.0 mg/m3 Total Dust O None
Water	7732-18-5	23.6	A None O None
Xylene	1330-20-7	8.0@25.0°C	A 150.0 ppm 15 min STEL A 100.0 ppm O 100.0 ppm D 150.0 ppm 15 min STEL D 100.0 ppm 8 & 12 hour TWA

SECTION 3 - Hazards identification

Potential Health Effects:
Inhalation:
May cause nose and throat irritation. May cause nervous system depression, characterized by the following progressive steps: headache, dizziness, nausea, staggering gait, confusion, unconsciousness. Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage. If this product contains or is mixed with an isocyanate activator/hardener, the following health effects may apply: Exposure to isocyanates may cause respiratory sensitization. This effect may be permanent. Symptoms include an asthma-like reaction with shortness of breath, wheezing, cough or permanent lung sensitization. This effect may be delayed for several hours after exposure. Repeated overexposure to isocyanates may cause a decrease in lung function, which may be permanent. Individuals with lung or breathing problems or prior reactions to isocyanates must not be exposed to vapors or spray mist of this product.

Ingestion:
May result in gastrointestinal distress.

Skin or eye contact:
May cause irritation or burning of the eyes. Repeated or prolonged liquid contact may cause skin irritation with discomfort and dermatitis.

Other Potential Health Effects in addition to those listed above:
4-chlorobenzotrifluoride
Increased susceptibility to the effects of this material may be observed in people with preexisting disease of any of the following: skin. Prolonged or repeated exposure may cause damage to any of the following organs/systems: kidneys, liver, thyroid. Potential skin sensitizer that may cause allergic reactions and contact dermatitis resulting in severe irritation, dryness, and cracking of the skin. Ingestion may cause any of the following: gastrointestinal irritation. Eye contact may cause any of the following: permanent eye injury. Inhalation may cause any of the following: stupor (central nervous system depression), respiratory tract irritation.

Aliphatic polyisocyanate resin
Overexposure may cause asthma-like reactions with shortness of breath, wheezing, cough, which may be permanent; or permanent lung sensitization. This effect may be delayed for several hours after exposure. The following medical conditions may be aggravated by exposure: asthma, skin disorders, respiratory disorders. Potential skin sensitizer that may cause allergic reactions and contact dermatitis resulting in severe irritation, dryness, and cracking of the skin. Skin or eye contact may cause any of the following: irritation.

Aromatic hydrocarbon-A
Laboratory studies with rats have shown that petroleum distillates can cause kidney damage and kidney or liver tumors. These effects were not seen in similar studies with guinea pigs, dogs, or monkeys. Several studies evaluating petroleum workers have not shown a significant increase of kidney damage or an increase in kidney or liver tumors.

Aromatic hydrocarbon-B
The following medical conditions may be aggravated by exposure: skin disorders. Laboratory studies with rats have shown that petroleum distillates can cause kidney damage and kidney or liver tumors. These effects were not seen in similar studies with guinea pigs, dogs, or monkeys. Several studies evaluating petroleum workers have not shown a significant increase of kidney damage or an increase in kidney or liver tumors.

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Benzoyl peroxide
Repeated or prolonged skin contact may cause any of the following: skin sensitization. Skin or eye contact may cause any of the following: irritation. Inhalation may cause any of the following: respiratory tract irritation.

Butyl acetate
May cause abnormal liver function. The following medical conditions may be aggravated by exposure: respiratory system. Tests for embryotoxic activity in animals has been inconclusive. Rats exposed to very high airborne levels have exhibited high frequency hearing deficits. The significance of this to man is unknown. Has been toxic to the fetus in laboratory animals at doses that are toxic to the mother.

Diacetone alcohol
Increased susceptibility to the effects of this material may be observed in people with preexisting disease of any of the following: cardiovascular system, central nervous system, eyes, respiratory system, skin, red blood cells. Overexposure may cause damage to any of the following organs/systems: kidneys, liver, red blood cells. Tests for mutagenic activity in bacterial or mammalian cell cultures have been inconclusive.

Ethyl acetate
Increased susceptibility to the effects of this material may be observed in people with preexisting disease of any of the following: eyes, respiratory system, skin. Tests in laboratory animals have shown effects on any of the following organs/systems: blood, kidneys, liver.

Ethylbenzene
Is an IARC, NTP or OSHA carcinogen. Increased susceptibility to the effects of this material may be observed in people with preexisting disease of any of the following: central nervous system, kidneys, liver, lungs. Recurrent overexposure may result in liver and kidney injury. Studies in laboratory animals have shown reproductive, embryotoxic and developmental effects.
WARNING: This chemical is known to the State of California to cause cancer.

Ethylene glycol monobutyl ether acetate
May destroy red blood cells. May cause abnormal kidney function. May cause temporary upper respiratory and/or lung irritation with cough, difficult breathing, or shortness of breath. The following medical conditions may be aggravated by exposure: central nervous system, gastrointestinal system, kidneys, liver, dermatitis. Can be absorbed through the skin in harmful amounts. Overexposure may cause damage to any of the following organs/systems: blood, kidneys, liver. Ingestion may cause headache, nausea, vomiting, dizziness, and drowsiness.

Isobutyl alcohol
Has shown carcinogenic activity in laboratory animals at high doses. Significance to man is unknown. May cause irritation of the mucous membranes. May cause abnormal liver function. Increased susceptibility to the effects of this material may be observed in people with preexisting disease of any of the following: eyes, respiratory system, skin. Tests in laboratory animals have shown effects on any of the following organs/systems: bone marrow, liver. Prolonged skin contact may cause chemical burns. Liquid splashes in the eye may result in chemical burns.

Isophorone diisocyanate homopolymer
May cause temporary upper respiratory and/or lung irritation with cough, difficult breathing, or shortness of breath. Overexposure may cause asthma-like reactions with shortness of breath, wheezing, cough, which may be permanent; or permanent lung sensitization. This effect may be delayed for several hours after exposure. Repeated and prolonged overexposure may cause delayed effects involving the respiratory system. Repeated overexposure to isocyanates may cause lung injury, including a decrease in lung function, which may be permanent. Overexposure may cause damage to any of the following organs/systems: lungs, skin. The following medical conditions may be aggravated by overexposure: asthma, eye disorders, eczema, skin disorders, respiratory disorders.

N-butyl alcohol
May cause abnormal blood forming function with anemia. Liquid splashes in the eye may result in chemical burns.

N-propanol
Has shown mutagenic activity in laboratory cell culture tests. Has shown carcinogenic activity in laboratory animals at high doses. Significance to man is unknown. May cause abnormal liver function. Can be absorbed through the skin in harmful amounts.

Phosphoric acid
Ingestion may cause any of the following: burns to mouth and stomach. Inhalation of vapor may cause any of the following: burns to respiratory system. Skin or eye contact may cause any of the following: burns.

Propylene glycol methyl ether
Tests in laboratory animals have shown effects on any of the following organs/systems: kidneys, liver. Aspiration may occur during swallowing or vomiting, resulting in lung damage.

Propylene glycol monomethyl ether acetate
Recurrent overexposure may result in liver and kidney injury.

Toluene
Increased susceptibility to the effects of this material may be observed in people with preexisting disease of any of the following: central nervous system, kidneys, liver, respiratory system, skin. Can be absorbed through the skin in harmful amounts. Recurrent overexposure may result in liver and kidney injury. High airborne levels have produced irregular heart beats in animals and occasional palpitations in humans. Rats exposed to very high airborne levels have exhibited high frequency hearing deficits. The significance of this to man is unknown.
WARNING: This chemical is known to the State of California to cause birth defects or other reproductive harm.

Xylene
Increased susceptibility to the effects of this material may be observed in people with preexisting disease of any of the following: bone marrow, cardiovascular system, central nervous system, kidneys, liver, lungs. Recurrent overexposure may result in liver and kidney injury. High exposures may produce irregular heart beats. Canada classifies Xylene as a developmental toxin as high exposures to xylenes in some animal studies have been reported to cause health effects on the developing fetus/embryo. These effects were often at levels toxic to the adult animal. The significance of these effects to humans is not known. Repeated or prolonged skin contact may cause any of the following: irritation, dryness, cracking of the skin.

SECTION 4 - First aid measures

First Aid Procedures:
Inhalation:
If affected by inhalation of vapor or spray mist, move to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing difficulty persists, or occurs later, consult a physician.

Ingestion:
In the unlikely event of ingestion, DO NOT INDUCE VOMITING. Call a physician immediately and have names of ingredients available.

Skin or eye contact:
In case of eye contact, immediately flush with plenty of water for at least 15 minutes; call a physician. In case of skin contact, wash thoroughly with soap and water. If irritation occurs, contact a physician.

SECTION 5 - Fire-fighting measures

Flash Point (Closed Cup): See Section 11 for exact values.

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Flammable Limits: LFL 0.5 % UFL 13.7 %

Extinguishing Media:
Universal aqueous film-forming foam, carbon dioxide, dry chemical.

Fire Fighting Procedures:
Full protective equipment, including self-contained breathing apparatus, is recommended. Water from fog nozzles may be used to prevent pressure build-up.

Fire and Explosion Hazards :
For flammable liquids, vapor/air will ignite when an ignition source is present. In other cases, when heated above the flash point, emits flammable vapors which, when mixed with air, can burn or be explosive. Fine mists or sprays may be flammable at temperatures below the flash point.

SECTION 6 - Accidental release measures

Procedures for cleaning up spills or leaks:
Ventilate area. Remove sources of ignition. Prevent skin and eye contact and breathing of vapor. If material does not contain or is not mixed with an isocyanate activator/hardener: Wear a properly fitted air-purifying respirator with organic vapor cartridges (NIOSH approved TC-23C), eye protection, gloves and protective clothing. Confine, remove with inert absorbent, and dispose of properly. If the material contains, or is mixed with an isocyanate activator/hardener: Wear a positive-pressure, supplied-air respirator (NIOSH approved TC-19C), eye protection, gloves and protective clothing. Pour liquid decontamination solution over the spill and allow to sit at least 10 minutes. Typical decontamination solutions for isocyanate containing materials are: 20% Surfactant (Tergitol TMN 10) and 80% Water OR 0-10% Ammonia, 2-5% Detergent and Water (balance). Pressure can be generated. Do not seal waste containers for 48 hours to allow C02 to vent. After 48 hours, material may be sealed and disposed of properly.

SECTION 7 - Handling and storage

Precautions to be taken in handling and storing:
Observe label precautions. If combustible (flashpoint between 100 - 200 deg F), keep away from heat, sparks and flame. If flammable (flashpoint less than 100 deg F), also keep away from static discharges and other sources of ignition. If material is extremely flammable (flashpoint less than 20 deg F) or flammable, VAPORS MAY IGNITE EXPLOSIVELY OR CAUSE FLASH FIRE, respectively. Vapors may spread long distances. Prevent buildup of vapors. Close container after each use. Ground containers when pouring. Wash thoroughly after handling and before eating or smoking. Do not store above 120 deg F. If product is waterbased, do not freeze.

Other precautions:
If material is a coating: do not sand, flame cut, braze or weld dry coating without a NIOSH approved air purifying respirator with particulate filters or appropriate ventilation , and gloves.

SECTION 8 - Exposure controls / personal protection

Engineering controls and work practices:
Ventilation
Provide sufficient ventilation in volume and pattern to keep contaminants below applicable exposure limits.

Respiratory protection
Do not breathe vapors or mists. If this product contains isocyanates or is used with an isocyanate activator/hardener, wear a positive-pressure, supplied-air respirator (NIOSH approved TC-19C) while mixing activator/hardener with paint, during application and until all vapors and spray mist are exhausted. If product does not contain or is not mixed with an isocyanate activator/hardener, a properly fitted air-purifying respirator with organic vapor cartridges (NIOSH TC-23C) and particulate filter (NIOSH TC-84A) may be used. Follow respirator manufacturer s directions for respirator use. Do not permit anyone without protection in the painting area. Individuals with history of lung or breathing problems or prior reaction to isocyanates should not use or be exposed vapor or spray mist if product contains or is mixed with isocyanate activators/hardeners.

Protective equipment
Personal protective equipment should be worn to prevent contact with eyes, skin or clothing.

Skin protection
Neoprene gloves and coveralls are recommended.

Eye protection
Desirable in all industrial situations. Goggles are preferred to prevent eye irritation. If safety glasses are substituted, include splash guard or side shields.

SECTION 9 - Physical and chemical properties

Evaporation rate	Slower than Ether
Water solubility	NIL
Vapour density	Heavier than air
Approx. Boiling Range (°C)	46.1 - 197 °C
Approx. Freezing Range (°C)	-127 - -83 °C
Gallon Weight (lbs/gal)	7.23 - 9.97
Specific Gravity	0.87 - 1.19
Percent Volatile By Volume	11.11 - 98.63
Percent Volatile By Weight	9.70 - 96.97
Percent Solids By Volume	1.38 - 88.89
Percent Solids By Weight	3.03 - 90.30

SECTION 10 - Stability and reactivity

Stability:
Stable

Incompatibility (materials to avoid):
None reasonably foreseeable

Hazardous decomposition products:
CO, C02, smoke, and oxides of any heavy metals that are reported in "Composition, Information on Ingredients" section.

Hazardous Polymerization:
Will not occur.

Sensitivity to Static Discharge:
For flammable materials (flashpoint less than 100 deg F) and combustibles (flashpoint between 100-200 deg F) if heated above the flashpoint, solvent vapors in air may explode if static grounding and bonding is not used during transfer of this product.

Sensitivity to Mechanical Impact:
None known.

SECTION 11 - Additional Information

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290 3183 4™ 1,6-hexamethylene diisocyanate(0.3%*@), Aliphatic polyisocyanate resin, Butyl acetate, Ethylbenzene(1.2 - 3.1%*@), Methyl acetate, Xylene(9 - 11%*@)
GAL WT: 8.29 WT PCT SOLIDS: 48.03 VOL PCT SOLIDS: 41.47
SOLVENT DENSITY: 7.34 VOC LE: 4.1 VOC AP: 4.0
FLASH POINT: 20°F to below 73°F H: 3 F: 3 R: 1 OSHA STORAGE: IB
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: YES

290 9520 4™ Cyclohexanone, peroxide, Diacetone alcohol, Ethyl acetate, Phthalates(20%*@), Water
GAL WT: 8.51 WT PCT SOLIDS: 34.00 VOL PCT SOLIDS: 28.79
SOLVENT DENSITY: 7.89 VOC LE: 5.5 VOC AP: 5.4
FLASH POINT: 20°F to below 73°F H: 2 F: 3 R: 0 OSHA STORAGE: IB
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: YES

291 0909 4™ 1,2-benzenedicarboxylic acid, bis(2-methylpropyl) ester, Benzoyl peroxide(50%*@), Treated amorphous fumed silica, Water
GAL WT: 9.51 WT PCT SOLIDS: 90.30 VOL PCT SOLIDS: 88.89
SOLVENT DENSITY: 8.32 VOC LE: 0.0 VOC AP: 0.0
FLASH POINT: No measurable H: 1 F: 0 R: 0 OSHA STORAGE: N/A
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: NO

291 3120 0™ 1,2,4-trimethyl benzene(1%*), 1,6-hexamethylene diisocyanate(0.1%*@), Aliphatic polyisocyanate resin, Aromatic hydrocarbon-B, Butyl acetate, Propylene glycol monomethyl ether acetate
GAL WT: 9.13 WT PCT SOLIDS: 77.18 VOL PCT SOLIDS: 72.28
SOLVENT DENSITY: 7.52 VOC LE: 2.1 VOC AP: 2.1
FLASH POINT: 73°F to below 100°F H: 3 F: 3 R: 1 OSHA STORAGE: IC
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: YES

291 3170 7™ 1,6-hexamethylene diisocyanate(0.2%*@), Aliphatic polyisocyanate resin, Butyl acetate
GAL WT: 9.20 WT PCT SOLIDS: 83.50 VOL PCT SOLIDS: 79.34
SOLVENT DENSITY: 7.35 VOC LE: 1.5 VOC AP: 1.5
FLASH POINT: 73°F to below 100°F H: 2 F: 3 R: 1 OSHA STORAGE: IC
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: NO

291 3220 0™ 1,6-hexamethylene diisocyanate(0.1%*@), Aromatic hydrocarbon-B, Butyl acetate, Ethylbenzene(0.9 - 2.3%*@), Isophorone diisocyanate homopolymer, Polyurethane, Xylene(7 - 8%*@)
GAL WT: 8.85 WT PCT SOLIDS: 70.49 VOL PCT SOLIDS: 64.43
SOLVENT DENSITY: 7.27 VOC LE: 2.6 VOC AP: 2.6
FLASH POINT: 73°F to below 100°F H: 3 F: 3 R: 1 OSHA STORAGE: IC
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: YES

291 3230 0™ 1,6-hexamethylene diisocyanate(0.1%*@), Aromatic hydrocarbon-B, Butyl acetate, Ethyl 3-ethoxy propionate, Ethylbenzene(0.3 - 0.7%*@), Ethylene glycol monobutyl ether acetate(3%*@), Isophorone diisocyanate homopolymer, Polyurethane, Xylene(2 - 3%*@)
GAL WT: 8.92 WT PCT SOLIDS: 70.41 VOL PCT SOLIDS: 64.87
SOLVENT DENSITY: 7.45 VOC LE: 2.6 VOC AP: 2.6
FLASH POINT: 73°F to below 100°F H: 3 F: 3 R: 1 OSHA STORAGE: IC
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: YES

291 3240 0™ 1,6-hexamethylene diisocyanate(0.2%*@), Aliphatic polyisocyanate resin, Aromatic hydrocarbon-B, Butyl acetate, Ethyl 3-ethoxy propionate, Ethylbenzene(0.3 - 0.9%*@), Ethylene glycol monobutyl ether acetate(6%*@), Propylene glycol monomethyl ether acetate, Xylene(3 - 3%*@)
GAL WT: 9.02 WT PCT SOLIDS: 70.41 VOL PCT SOLIDS: 65.11
SOLVENT DENSITY: 7.65 VOC LE: 2.7 VOC AP: 2.7
FLASH POINT: 100°F - 141°F H: 3 F: 2 R: 1 OSHA STORAGE: II
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: YES

291 3301 7™ Carbamate resin, Chlorinated polyolefin, Ethylbenzene(9.1 - 22.8%*@), Modified chlorinated polyolefin, Xylene(68 - 82%*@)
GAL WT: 7.28 WT PCT SOLIDS: 8.79 VOL PCT SOLIDS: 8.04
SOLVENT DENSITY: 7.19 VOC LE: 6.6 VOC AP: 6.6
FLASH POINT: 73°F to below 100°F H: 2 F: 3 R: 0 OSHA STORAGE: IC
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: YES

291 3310 6/292 3310 0™ 1,2,4-trimethyl benzene(5%*), 1,3,5-trimethyl benzene, Aliphatic polyisocyanate resin, Aromatic hydrocarbon-B, Butyl acetate, Ethylbenzene(0.8 - 2.0%*@), Propylene glycol monomethyl ether acetate, Xylene(6 - 7%*@)
GAL WT: 8.33 WT PCT SOLIDS: 47.96 VOL PCT SOLIDS: 40.99
SOLVENT DENSITY: 7.33 VOC LE: 4.3 VOC AP: 4.3
FLASH POINT: 73°F to below 100°F H: 3 F: 3 R: 1 OSHA STORAGE: IC
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: YES

291 3315 7/292 3315 1™ 1,2,4-trimethyl benzene(3%*), Aliphatic polyisocyanate resin, Aromatic hydrocarbon-A, Aromatic hydrocarbon-B, Butyl acetate, Ethyl 3-ethoxy propionate, Ethylbenzene(0.4 - 0.9%*@), Glycol esters(9%@), Xylene(3 - 4%*@)
GAL WT: 8.50 WT PCT SOLIDS: 49.51 VOL PCT SOLIDS: 43.19
SOLVENT DENSITY: 7.55 VOC LE: 4.3 VOC AP: 4.3
FLASH POINT: 73°F to below 100°F H: 3 F: 3 R: 1 OSHA STORAGE: IC
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: YES

291 3320 3/292 3320 8™ 1,2,4-trimethyl benzene(4%*), Aliphatic polyisocyanate resin, Aromatic hydrocarbon-A, Aromatic hydrocarbon-B, Butyl acetate, Ethyl 3-ethoxy propionate, Glycol esters(16%@)
GAL WT: 8.53 WT PCT SOLIDS: 49.51 VOL PCT SOLIDS: 43.36
SOLVENT DENSITY: 7.59 VOC LE: 4.3 VOC AP: 4.3
FLASH POINT: 100°F - 141°F H: 3 F: 2 R: 1 OSHA STORAGE: II
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: YES

291 4076 0™ 1,2,4-trimethyl benzene(3%*), Aromatic hydrocarbon-B, Butyl acetate, Ethylbenzene(2.4 - 5.9%*@), N-butyl alcohol(33%*), N-propanol, Phosphoric acid, Propylene glycol methyl ether, Water, Xylene(18 - 21%*@)
GAL WT: 7.23 WT PCT SOLIDS: 3.03 VOL PCT SOLIDS: 1.38
SOLVENT DENSITY: 7.08 VOC LE: 7.0 VOC AP: 6.9
FLASH POINT: 73°F to below 100°F H: 2 F: 3 R: 1 OSHA STORAGE: IC
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: YES

291 4076 1™ 1,2,4-trimethyl benzene(3%*), Aromatic hydrocarbon-B, Ethylbenzene(2.8 - 6.9%*@), Isobutyl alcohol, Phosphoric acid, Propylene glycol methyl ether, Xylene(21 - 25%*@)
GAL WT: 7.30 WT PCT SOLIDS: 4.68 VOL PCT SOLIDS: 2.15
SOLVENT DENSITY: 7.10 VOC LE: 6.9 VOC AP: 6.9
FLASH POINT: 20°F to below 73°F H: 2 F: 3 R: 1 OSHA STORAGE: IB
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: YES

292 3193 0™ 1,2,4-trimethyl benzene(1%*), 4-chlorobenzotrifluoride, Aliphatic polyisocyanate resin, Aromatic hydrocarbon-B, Butyl acetate, Ethyl 3-ethoxy propionate, Ethylbenzene(0.2 - 0.5%*@), Xylene(2 - 2%*@)
GAL WT: 9.90 WT PCT SOLIDS: 45.02 VOL PCT SOLIDS: 46.18
SOLVENT DENSITY: 10.10 VOC LE: 1.8 VOC AP: 1.1
FLASH POINT: 73°F to below 100°F H: 2 F: 3 R: 1 OSHA STORAGE: IC
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: YES

292 3195 7™ 1,2,4-trimethyl benzene(1%*), 4-chlorobenzotrifluoride, Aliphatic polyisocyanate resin, Aromatic hydrocarbon-B, Butyl acetate, Ethyl 3-ethoxy propionate, Ethylbenzene(0.2 - 0.5%*@), Xylene(2 - 2%*@)
GAL WT: 9.90 WT PCT SOLIDS: 45.01 VOL PCT SOLIDS: 46.17
SOLVENT DENSITY: 10.10 VOC LE: 1.8 VOC AP: 1.1
FLASH POINT: 73°F to below 100°F H: 2 F: 3 R: 1 OSHA STORAGE: IC
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: YES

292 3197 0™ 1,6-hexamethylene diisocyanate(0.1%*@), 4-chlorobenzotrifluoride, Aliphatic polyisocyanate resin, Aromatic hydrocarbon-B, Ethyl 3-ethoxy propionate, Ethylbenzene(0.2 - 0.5%*@), Xylene(2 - 2%*@)
GAL WT: 9.96 WT PCT SOLIDS: 44.93 VOL PCT SOLIDS: 46.21
SOLVENT DENSITY: 10.19 VOC LE: 1.9 VOC AP: 1.1
FLASH POINT: 73°F to below 100°F H: 2 F: 3 R: 1 OSHA STORAGE: IC
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: YES

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292 3199 0™ 1,6-hexamethylene diisocyanate(0.1%*@), 4-chlorobenzotrifluoride, Aliphatic polyisocyanate resin, Ethyl 3-ethoxy propionate
GAL WT: 9.97 WT PCT SOLIDS: 44.70 VOL PCT SOLIDS: 46.26
SOLVENT DENSITY: 10.24 VOC LE: 1.9 VOC AP: 1.2
FLASH POINT: 100°F - 141°F H: 2 F: 2 R: 1 OSHA STORAGE: II
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: NO

292 3307 0™ Aliphatic polyisocyanate resin, Aromatic hydrocarbon-B, Butyl acetate, Ethylbenzene(0.3 - 0.8%*@), Propylene glycol monomethyl ether acetate, Toluene(41 - 41%*@), Xylene(2 - 3%*@)
GAL WT: 8.24 WT PCT SOLIDS: 47.79 VOL PCT SOLIDS: 40.44
SOLVENT DENSITY: 7.23 VOC LE: 4.3 VOC AP: 4.3
FLASH POINT: 20°F to below 73°F H: 3 F: 3 R: 1 OSHA STORAGE: IB
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: YES

292 3325 9™ Aliphatic polyisocyanate resin, Aromatic hydrocarbon-B, Butyl acetate, Glycol esters(44%@)
GAL WT: 8.64 WT PCT SOLIDS: 49.51 VOL PCT SOLIDS: 43.92
SOLVENT DENSITY: 7.80 VOC LE: 4.4 VOC AP: 4.4
FLASH POINT: 141°F - 200°F H: 3 F: 2 R: 1 OSHA STORAGE: IIIA
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: NO

293 3309 1™ 1,2,4-trimethyl benzene(5%*), 1,3,5-trimethyl benzene, Aliphatic polyisocyanate resin, Aromatic hydrocarbon-B, Butyl acetate, Ethylbenzene(0.8 - 2.0%*@), Propylene glycol monomethyl ether acetate, Xylene(6 - 7%*@)
GAL WT: 8.33 WT PCT SOLIDS: 48.00 VOL PCT SOLIDS: 41.03
SOLVENT DENSITY: 7.33 VOC LE: 4.3 VOC AP: 4.3
FLASH POINT: 73°F to below 100°F H: 3 F: 3 R: 1 OSHA STORAGE: IC
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: YES

Footnotes:
TSCA: in compliance = In compliance with TSCA Inventory requirements for commercial purposes.
* = Section 313 Supplier Notification: These chemicals are subject to the reporting requirements of Section 313 of the Emergency planning and Right-to-Know act of 1986 and of 40 CFR 372.
@ = Listed as a Clean Air Act Hazardous Air Pollutant.
# = EPCRA Section 302 - Extremely hazardous substances.

Notice:
The information on this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

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Spies Hecker Material Safety Data Sheet
Spies Hecker® Reducers/Solvents/Solvent Additives

SECTION 1 - Identification of the substance/preparation and of the company/undertaking

Manufacturer: Spies Hecker
47818 W. Anchor Ct.
Plymouth, MI, 48170

Telephone:
Product information: (888) 371-3313
Medical emergency: (800) 441-3637
Transportation emergency: (800) 424-9300 (CHEMTREC)

Product: **7 - Spies Hecker® Reducers/Solvents/Solvent Additives**

Products covered in this document include: Permahyd® VE Water 6000 (375 6000 0), Priamat® Plastic Reducer 8581 (295 8581 3/291 8581 5), Permacron® MS Dura Plus 8580 (295 8580 5/291 8580 7), Permacron® Reducer Slow 3365 (295 3365 1), Permacron® Reducer Medium 3363 (295 3363 5/291 3363 7), Permacron® Supercryl Reducer Extra Slow 3057 (295 3057 1), Permacron® Supercryl Reducer Slow 3056 (295 3056 3), Permacron® Supercryl Reducer Express 3055 (295 3055 5), Permasolid® Wet on Wet Additive 9070 (293 9070 0), Permasolid® Spectro Additive 5407 (293 5407 0), Permasolid® HS Accelerator 9030 (291 9030 4), Permacron® Base Coat Petarder 9015 (291 9015 0), Raderal® Retarder 9010 (291 9010 0), Permacron® Antisilicone 8510 (291 8510 6), Raderal® Reducer 7690 (291 7690 5), Permacron® Reducer Slow 3371 (291 3371 0), Permacron® Reducer Medium 3370 (291 3370 1), Permacron® Reducer Fast 3369 (291 3369 6), Permacron® Reducer Extra Slow 3366 (291 3366 1), Permacron® Supercryl Reducer Medium 3054 (291 3054 9/295 3054 7), Permacron® Blending Solvent 1031 (291 1031 9)

DOT Shipping Name: See DOT Addendum.

Hazardous Materials Information: See Section 10.

SECTION 2 - Composition/information on ingredients

INGREDIENTS	CAS #	VAPOR PRESSURE	EXPOSURE LIMITS
1,2,4-trimethyl benzene	95-63-6	7.0@44.4°C	A 25.0 ppm O 25.0 ppm
1,3,5-trimethyl benzene	108-67-8	None	A 25.0 ppm O None
4-chlorobenzotrifluoride	98-56-6	7.6@25.0°C	D 20.0 ppm 8 & 12 hour TWA A None O None
Acetone	67-64-1	247.0@68.0°F	A 750.0 ppm 15 min STEL A 500.0 ppm O 1000.0 ppm D 500.0 ppm 8 & 12 hour TWA
Acrylate polymer	NotAvail	None	A None O None
Aromatic hydrocarbon	64742-95-6	10.0@25.0°C	D 50.0 ppm A None O None
Butyl acetate	123-86-4	10.0	A 200.0 ppm 15 min STEL A 150.0 ppm O 150.0 ppm
Cellulose acetate butyrate	9004-36-8	<0.0	A None O None
Cyclohexanone	108-94-1	3.9	A 50.0 ppm 15 min STEL Skin A 20.0 ppm Skin O 25.0 ppm TWA
Dipropylene glycol methyl ether	34590-94-8	0.4@25.0°C	A 150.0 ppm 15 min STEL Skin A 100.0 ppm Skin O 100.0 ppm Skin
Esters high boiling point	7397-62-8	None	A None O None
Ethoxypropyl acetate	98516-30-4	0.2	A None O None
Ethyl 3-ethoxy propionate	763-69-9	1.1@25.0°C	A None O None
Ethyl acetate	141-78-6	93.2@25.0°C	A 400.0 ppm O 400.0 ppm
Ethylbenzene	100-41-4	7.0	A 125.0 ppm 15 min STEL A 100.0 ppm O 100.0 ppm D 25.0 ppm 8 & 12 hour TWA
Glycol esters	112-07-2	0.4	A 130.0 mg/m3 D 10.0 ppm Skin D 20.0 ppm 8 & 12 hour TWA O None
Hydrotreated heavy naphtha (petroleum)	64742-48-9	None	A None O None
Isobutyl alcohol	78-83-1	9.7@22.0°C	A 50.0 ppm O 100.0 ppm
Isopropyl alcohol	67-63-0	48.0	A 400.0 ppm 15 min STEL A 200.0 ppm O 400.0 ppm D 200.0 ppm 8 & 12 hour TWA

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INGREDIENTS	CAS #	VAPOR PRESSURE	EXPOSURE LIMITS
Naphtha (petroleum), hydrodesulfurized heavy	64742-82-1	None	A None O None
Octamethylcyclotetrasiloxane	556-67-2	None	A None O None
Polyacrylic resin	NotAvail	None	A None O None
Polyester resin	129922-22-1	None	A None O None
Propanol, 1(or 2)-ethoxy-, acetate	98516-30-4	None	A None O None
Propylene glycol methyl ether	107-98-2	11.2@77.0°F	A 150.0 ppm 15 min STEL A 100.0 ppm O None
Propylene glycol monomethyl ether acetate	108-65-6	3.8	D 10.0 ppm 8 & 12 hour TWA A None O None
Water	7732-18-5	23.6	A None O None
Xylene	1330-20-7	8.0@25.0°C	A 150.0 ppm 15 min STEL A 100.0 ppm O 100.0 ppm D 150.0 ppm 15 min STEL D 100.0 ppm 8 & 12 hour TWA

SECTION 3 - Hazards identification

Potential Health Effects:
Inhalation:
May cause nose and throat irritation. May cause nervous system depression, characterized by the following progressive steps: headache, dizziness, nausea, staggering gait, confusion, unconsciousness. Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage. If this product contains or is mixed with an isocyanate activator/hardener, the following health effects may apply: Exposure to isocyanates may cause respiratory sensitization. This effect may be permanent. Symptoms include an asthma-like reaction with shortness of breath, wheezing, cough or permanent lung sensitization. This effect may be delayed for several hours after exposure. Repeated overexposure to isocyanates may cause a decrease in lung function, which may be permanent. Individuals with lung or breathing problems or prior reactions to isocyanates must not be exposed to vapors or spray mist of this product.

Ingestion:
May result in gastrointestinal distress.

Skin or eye contact:
May cause irritation or burning of the eyes. Repeated or prolonged liquid contact may cause skin irritation with discomfort and dermatitis.

Other Potential Health Effects in addition to those listed above:
4-chlorobenzotrifluoride
Increased susceptibility to the effects of this material may be observed in people with preexisting disease of any of the following: skin. Prolonged or repeated exposure may cause damage to any of the following organs/systems: kidneys, liver, thyroid. Potential skin sensitizer that may cause allergic reactions and contact dermatitis resulting in severe irritation, dryness, and cracking of the skin. Ingestion may cause any of the following: gastrointestinal irritation. Eye contact may cause any of the following: permanent eye injury. Inhalation may cause any of the following: stupor (central nervous system depression), respiratory tract irritation.

Acetone
The following medical conditions may be aggravated by exposure: lung disease, eye disorders, skin disorders. Overexposure may cause damage to any of the following organs/systems: blood, central nervous system, eyes, kidneys, liver, respiratory system, skin.

Aromatic hydrocarbon
The following medical conditions may be aggravated by exposure: skin disorders. Laboratory studies with rats have shown that petroleum distillates can cause kidney damage and kidney or liver tumors. These effects were not seen in similar studies with guinea pigs, dogs, or monkeys. Several studies evaluating petroleum workers have not shown a significant increase of kidney damage or an increase in kidney or liver tumors.

Butyl acetate
May cause abnormal liver function. The following medical conditions may be aggravated by exposure: respiratory system. Tests for embryotoxic activity in animals has been inconclusive. Rats exposed to very high airborne levels have exhibited high frequency hearing deficits. The significance of this to man is unknown. Has been toxic to the fetus in laboratory animals at doses that are toxic to the mother.

Cyclohexanone
Can be absorbed through the skin in harmful amounts. Recurrent overexposure may result in liver and kidney injury. Liquid splashes in the eye may result in chemical burns. Tests for mutagenic activity in bacterial or mammalian cell cultures have been inconclusive.

Ethyl acetate
Increased susceptibility to the effects of this material may be observed in people with preexisting disease of any of the following: eyes, respiratory system, skin. Tests in laboratory animals have shown effects on any of the following organs/systems: blood, kidneys, liver.

Ethylbenzene
Is an IARC, NTP or OSHA carcinogen. Increased susceptibility to the effects of this material may be observed in people with preexisting disease of any of the following: central nervous system, kidneys, liver, lungs. Recurrent overexposure may result in liver and kidney injury. Studies in laboratory animals have shown reproductive, embryotoxic and developmental effects.
WARNING: This chemical is known to the State of California to cause cancer.

Isobutyl alcohol
Has shown carcinogenic activity in laboratory animals at high doses. Significance to man is unknown. May cause irritation of the mucous membranes. May cause abnormal liver function. Increased susceptibility to the effects of this material may be observed in people with preexisting disease of any of the following: eyes, respiratory system, skin. Tests in laboratory animals have shown effects on any of the following organs/systems: bone marrow, liver. Prolonged skin contact may cause chemical burns. Liquid splashes in the eye may result in chemical burns.

Isopropyl alcohol
The following medical conditions may be aggravated by exposure: dermatitis, respiratory disease. Developmental toxicity was seen in rat's offspring at doses that were maternally toxic. Contact will cause moderate to severe redness and swelling, itching, tingling sensation, painful burning. May cause injury to the cornea of the eyes. Prolonged or repeated

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exposure may cause damage to any of the following organs/systems: liver. Ingestion studies on laboratory animals showed that very high oral doses caused increased liver and kidney weights.

Octamethylcyclotetrasiloxane
Can irritate or burn eyes.

Polyacrylic resin
Increased susceptibility to the effects of this material may be observed in people with preexisting disease of any of the following: skin. May cause marked irritation of the mouth, throat, esophagus and stomach. Signs and symptoms of poisoning will include abdominal and chest pain or discomfort, nausea, vomiting, diarrhea, and malaise. Repeated or prolonged skin or eye contact may cause any of the following: irritation.

Propylene glycol methyl ether
Tests in laboratory animals have shown effects on any of the following organs/systems: kidneys, liver. Aspiration may occur during swallowing or vomiting, resulting in lung damage.

Propylene glycol monomethyl ether acetate
Recurrent overexposure may result in liver and kidney injury.

Xylene
Increased susceptibility to the effects of this material may be observed in people with preexisting disease of any of the following: bone marrow, cardiovascular system, central nervous system, kidneys, liver, lungs. Recurrent overexposure may result in liver and kidney injury. High exposures may produce irregular heart beats. Canada classifies Xylene as a developmental toxin as high exposures to xylenes in some animal studies have been reported to cause health effects on the developing fetus/embryo. These effects were often at levels toxic to the adult animal. The significance of these effects to humans is not known. Repeated or prolonged skin contact may cause any of the following: irritation, dryness, cracking of the skin.

SECTION 4 - First aid measures

First Aid Procedures:
Inhalation:
If affected by inhalation of vapor or spray mist, move to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing difficulty persists, or occurs later, consult a physician.

Ingestion:
In the unlikely event of ingestion, DO NOT INDUCE VOMITING. Call a physician immediately and have names of ingredients available.

Skin or eye contact:
In case of eye contact, immediately flush with plenty of water for at least 15 minutes; call a physician. In case of skin contact, wash thoroughly with soap and water. If irritation occurs, contact a physician.

SECTION 5 - Fire-fighting measures

Flash Point (Closed Cup): See Section 11 for exact values.

Flammable Limits: LFL 0 % UFL 13.7 %

Extinguishing Media:
Universal aqueous film-forming foam, carbon dioxide, dry chemical.

Fire Fighting Procedures:
Full protective equipment, including self-contained breathing apparatus, is recommended. Water from fog nozzles may be used to prevent pressure build-up.

Fire and Explosion Hazards :
For flammable liquids, vapor/air will ignite when an ignition source is present. In other cases, when heated above the flash point, emits flammable vapors which, when mixed with air, can burn or be explosive. Fine mists or sprays may be flammable at temperatures below the flash point.

SECTION 6 - Accidental release measures

Procedures for cleaning up spills or leaks:
Ventilate area. Remove sources of ignition. Prevent skin and eye contact and breathing of vapor. If material does not contain or is not mixed with an isocyanate activator/hardener: Wear a properly fitted air-purifying respirator with organic vapor cartridges (NIOSH approved TC-23C), eye protection, gloves and protective clothing. Confine, remove with inert absorbent, and dispose of properly. If the material contains, or is mixed with an isocyanate activator/hardener: Wear a positive-pressure, supplied-air respirator (NIOSH approved TC-19C), eye protection, gloves and protective clothing. Pour liquid decontamination solution over the spill and allow to sit at least 10 minutes. Typical decontamination solutions for isocyanate containing materials are: 20% Surfactant (Tergitol TMN 10) and 80% Water OR 0-10% Ammonia, 2-5% Detergent and Water (balance). Pressure can be generated. Do not seal waste containers for 48 hours to allow C02 to vent. After 48 hours, material may be sealed and disposed of properly.

SECTION 7 - Handling and storage

Precautions to be taken in handling and storing:
Observe label precautions. If combustible (flashpoint between 100 - 200 deg F), keep away from heat, sparks and flame. If flammable (flashpoint less than 100 deg F), also keep away from static discharges and other sources of ignition. If material is extremely flammable (flashpoint less than 20 deg F) or flammable, VAPORS MAY IGNITE EXPLOSIVELY OR CAUSE FLASH FIRE, respectively. Vapors may spread long distances. Prevent buildup of vapors. Close container after each use. Ground containers when pouring. Wash thoroughly after handling and before eating or smoking. Do not store above 120 deg F. If product is waterbased, do not freeze.

Other precautions:
If material is a coating: do not sand, flame cut, braze or weld dry coating without a NIOSH approved air purifying respirator with particulate filters or appropriate ventilation , and gloves.

SECTION 8 - Exposure controls / personal protection

Engineering controls and work practices:
Ventilation
Provide sufficient ventilation in volume and pattern to keep contaminants below applicable exposure limits.

Respiratory protection
Do not breathe vapors or mists. If this product contains isocyanates or is used with an isocyanate activator/hardener, wear a positive-pressure, supplied-air respirator (NIOSH approved TC-19C) while mixing activator/hardener with paint, during application and until all vapors and spray mist are exhausted. If product does not contain or is not mixed with an isocyanate activator/hardener, a properly fitted air-purifying respirator with organic vapor cartridges (NIOSH TC-23C) and particulate filter (NIOSH TC-84A) may be used. Follow respirator manufacturer s directions for respirator use. Do not permit anyone without protection in the painting area. Individuals with history of lung or breathing problems or prior

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reaction to isocyanates should not use or be exposed vapor or spray mist if product contains or is mixed with isocyanate activators/hardeners.

Protective equipment
Personal protective equipment should be worn to prevent contact with eyes, skin or clothing.

Skin protection
Neoprene gloves and coveralls are recommended.

Eye protection
Desirable in all industrial situations. Goggles are preferred to prevent eye irritation. If safety glasses are substituted, include splash guard or side shields.

SECTION 9 - Physical and chemical properties

Evaporation rate	Slower than Ether
Water solubility	NIL
Vapour density	Heavier than air
Approx. Boiling Range (°C)	56.1 - 195 °C
Approx. Freezing Range (°C)	-108 - -95 °C
Gallon Weight (lbs/gal)	6.78 - 10.71
Specific Gravity	0.81 - 1.28
Percent Volatile By Volume	74.87 - 100.00
Percent Volatile By Weight	70.84 - 100.00
Percent Solids By Volume	0.00 - 25.13
Percent Solids By Weight	0.00 - 29.16

SECTION 10 - Stability and reactivity

Stability:
Stable

Incompatibility (materials to avoid):
None reasonably foreseeable

Hazardous decomposition products:
CO, C02, smoke, and oxides of any heavy metals that are reported in "Composition, Information on Ingredients" section.

Hazardous Polymerization:
Will not occur.

Sensitivity to Static Discharge:
For flammable materials (flashpoint less than 100 deg F) and combustibles (flashpoint between 100-200 deg F) if heated above the flashpoint, solvent vapors in air may explode if static grounding and bonding is not used during transfer of this product.

Sensitivity to Mechanical Impact:
None known.

SECTION 11 - Additional Information

291 1031 9™ Cyclohexanone, Glycol esters(17%@), Propylene glycol monomethyl ether acetate
GAL WT: 7.93 WT PCT SOLIDS: 0.00 VOL PCT SOLIDS: 0.00
SOLVENT DENSITY: 7.93 VOC LE: 7.9 VOC AP: 7.9
FLASH POINT: 100°F - 141°F H: 2 F: 2 R: 0 OSHA STORAGE: II
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: NO

291 3054 9/295 3054 7™ Butyl acetate, Dipropylene glycol methyl ether, Esters high boiling point, Ethylbenzene(1.0 - 2.5%*@), Hydrotreated heavy naphtha (petroleum), Xylene(8 - 9%*@)
GAL WT: 7.09 WT PCT SOLIDS: 0.00 VOL PCT SOLIDS: 0.00
SOLVENT DENSITY: 7.08 VOC LE: 7.1 VOC AP: 7.1
FLASH POINT: 73°F to below 100°F H: 2 F: 3 R: 0 OSHA STORAGE: IC
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: NO

291 3366 1™ Ethylbenzene(0.1 - 0.3%*@), Glycol esters(97%@)
GAL WT: 7.84 WT PCT SOLIDS: 0.00 VOL PCT SOLIDS: 0.00
SOLVENT DENSITY: 7.85 VOC LE: 7.8 VOC AP: 7.8
FLASH POINT: 141°F - 200°F H: 0 F: 2 R: 0 OSHA STORAGE: IIIA
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: NO

291 3369 6™ 4-chlorobenzotrifluoride, Acetone
GAL WT: 6.78 WT PCT SOLIDS: 0.00 VOL PCT SOLIDS: 0.00
SOLVENT DENSITY: 6.78 VOC LE: 0.0 VOC AP: 0.0
FLASH POINT: Below 20°F H: 2 F: 3 R: 1 OSHA STORAGE: IB
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: NO

291 3370 1™ 4-chlorobenzotrifluoride, Acetone
GAL WT: 10.71 WT PCT SOLIDS: 0.00 VOL PCT SOLIDS: 0.00
SOLVENT DENSITY: 10.71 VOC LE: 0.0 VOC AP: 0.0
FLASH POINT: 100°F - 141°F H: 2 F: 2 R: 1 OSHA STORAGE: II
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: NO

291 3371 0™ 4-chlorobenzotrifluoride, Acetone, Ethyl 3-ethoxy propionate, Polyester resin
GAL WT: 10.48 WT PCT SOLIDS: 6.76 VOL PCT SOLIDS: 7.93
SOLVENT DENSITY: 10.61 VOC LE: 2.3 VOC AP: 0.2
FLASH POINT: 20°F to below 73°F H: 2 F: 3 R: 1 OSHA STORAGE: IB
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: NO

291 7690 5™ Butyl acetate, Ethyl acetate
GAL WT: 7.51 WT PCT SOLIDS: 0.00 VOL PCT SOLIDS: 0.00
SOLVENT DENSITY: 7.51 VOC LE: 7.5 VOC AP: 7.5
FLASH POINT: 20°F to below 73°F H: 1 F: 3 R: 0 OSHA STORAGE: IB
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: NO

291 8510 6™ Butyl acetate, Ethylbenzene(9.3 - 23.1%*@), Octamethylcyclotetrasiloxane, Xylene(69 - 83%*@)
GAL WT: 7.24 WT PCT SOLIDS: 2.50 VOL PCT SOLIDS: 2.26
SOLVENT DENSITY: 7.20 VOC LE: 7.1 VOC AP: 7.1
FLASH POINT: 73°F to below 100°F H: 2 F: 3 R: 0 OSHA STORAGE: IC
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: YES

291 9010 0™ Ethyl acetate
GAL WT: 7.53 WT PCT SOLIDS: 0.25 VOL PCT SOLIDS: 0.17
SOLVENT DENSITY: 7.52 VOC LE: 7.5 VOC AP: 7.5
FLASH POINT: 20°F to below 73°F H: 1 F: 3 R: 0 OSHA STORAGE: IB
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: NO

291 9015 0™ 1,2,4-trimethyl benzene(2%*), Aromatic hydrocarbon, Butyl acetate, Dipropylene glycol methyl ether, Glycol esters(18%@), Propylene glycol monomethyl ether acetate
GAL WT: 7.70 WT PCT SOLIDS: 0.00 VOL PCT SOLIDS: 0.00
SOLVENT DENSITY: 7.69 VOC LE: 7.7 VOC AP: 7.7
FLASH POINT: 73°F to below 100°F H: 2 F: 3 R: 0 OSHA STORAGE: IC
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: NO

291 9030 4™ Butyl acetate, Cellulose acetate butyrate, Ethylbenzene(2.8 - 7.0%*@), Xylene(21 - 25%*@)
GAL WT: 7.66 WT PCT SOLIDS: 18.41 VOL PCT SOLIDS: 14.49
SOLVENT DENSITY: 7.30 VOC LE: 6.2 VOC AP: 6.2
FLASH POINT: 73°F to below 100°F H: 2 F: 3 R: 0 OSHA STORAGE: IC
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: YES

293 5407 0™ 1,2,4-trimethyl benzene(5%*), 1,3,5-trimethyl benzene, Aromatic hydrocarbon, Butyl acetate, Polyacrylic resin
GAL WT: 7.80 WT PCT SOLIDS: 29.16 VOL PCT SOLIDS: 24.75

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SOLVENT DENSITY: 7.33 VOC LE: 5.5 VOC AP: 5.5
FLASH POINT: 20°F to below 73°F H: 2 F: 3 R: 0 OSHA STORAGE: IB
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: YES

293 9070 0™ 4-chlorobenzotrifluoride, Acrylate polymer, Aromatic hydrocarbon
GAL WT: 10.02 WT PCT SOLIDS: 22.36 VOL PCT SOLIDS: 25.13
SOLVENT DENSITY: 10.61 VOC LE: 2.8 VOC AP: 1.2
FLASH POINT: 73°F to below 100°F H: 1 F: 3 R: 1 OSHA STORAGE: IC
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: YES

295 3055 5™ 1,2,4-trimethyl benzene(3%*), Aromatic hydrocarbon, Butyl acetate, Ethoxypropyl acetate, Ethylbenzene(1.0 - 2.5%*@), Isobutyl alcohol, Xylene(8 - 9%*@)
GAL WT: 7.30 WT PCT SOLIDS: 0.00 VOL PCT SOLIDS: 0.00
SOLVENT DENSITY: 7.29 VOC LE: 7.3 VOC AP: 7.3
FLASH POINT: 73°F to below 100°F H: 2 F: 3 R: 0 OSHA STORAGE: IC
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: YES

295 3056 3™ 1,2,4-trimethyl benzene(5%*), 1,3,5-trimethyl benzene, Aromatic hydrocarbon, Butyl acetate, Dipropylene glycol methyl ether, Esters high boiling point, Ethylbenzene(0.7 - 1.5%*@), Glycol esters(8%@), Naphtha (petroleum), hydrodesulfurized heavy, Xylene(5 - 6%*@)
GAL WT: 7.25 WT PCT SOLIDS: 0.00 VOL PCT SOLIDS: 0.00
SOLVENT DENSITY: 7.27 VOC LE: 7.2 VOC AP: 7.2
FLASH POINT: 73°F to below 100°F H: 2 F: 3 R: 0 OSHA STORAGE: IC
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: YES

295 3057 1™ 1,2,4-trimethyl benzene(2%*), Aromatic hydrocarbon, Butyl acetate, Dipropylene glycol methyl ether, Glycol esters(18%@), Propylene glycol monomethyl ether acetate
GAL WT: 7.70 WT PCT SOLIDS: 0.00 VOL PCT SOLIDS: 0.00
SOLVENT DENSITY: 7.69 VOC LE: 7.7 VOC AP: 7.7
FLASH POINT: 73°F to below 100°F H: 2 F: 3 R: 0 OSHA STORAGE: IC
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: NO

295 3363 5/291 3363 7™ Butyl acetate, Propylene glycol monomethyl ether acetate
GAL WT: 7.67 WT PCT SOLIDS: 0.00 VOL PCT SOLIDS: 0.00
SOLVENT DENSITY: 7.67 VOC LE: 7.7 VOC AP: 7.7
FLASH POINT: 73°F to below 100°F H: 2 F: 3 R: 0 OSHA STORAGE: IC
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: NO

295 3365 1™ Butyl acetate, Ethoxypropyl acetate, Glycol esters(23%@), Propanol, 1(or 2)-ethoxy-, acetate
GAL WT: 7.57 WT PCT SOLIDS: 0.00 VOL PCT SOLIDS: 0.00
SOLVENT DENSITY: 7.58 VOC LE: 7.6 VOC AP: 7.6
FLASH POINT: 73°F to below 100°F H: 2 F: 3 R: 0 OSHA STORAGE: IC
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: NO

295 8580 5/291 8580 7™ Butyl acetate, Ethylbenzene(0.6 - 1.5%*@), Xylene(5 - 5%*@)
GAL WT: 7.34 WT PCT SOLIDS: 0.03 VOL PCT SOLIDS: 0.02
SOLVENT DENSITY: 7.33 VOC LE: 7.3 VOC AP: 7.3
FLASH POINT: 73°F to below 100°F H: 2 F: 3 R: 0 OSHA STORAGE: IC
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: NO

295 8581 3/291 8581 5™ Isobutyl alcohol, Isopropyl alcohol, Propylene glycol methyl ether
GAL WT: 7.17 WT PCT SOLIDS: 0.00 VOL PCT SOLIDS: 0.00
SOLVENT DENSITY: 7.16 VOC LE: 7.2 VOC AP: 7.2
FLASH POINT: 20°F to below 73°F H: 2 F: 3 R: 1 OSHA STORAGE: IB
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: NO

375 6000 0™ Water
GAL WT: 8.32 WT PCT SOLIDS: 0.00 VOL PCT SOLIDS: 0.00
SOLVENT DENSITY: 8.32 VOC LE: 0.0 VOC AP: 0.0
FLASH POINT: Above 200°F H: 0 F: 1 R: 0 OSHA STORAGE: IIIB
TSCA STATUS: In Compliance PHOTO-CHEMICALY REACTIVE: NO

Footnotes:
TSCA: in compliance = In compliance with TSCA Inventory requirements for commercial purposes.
* = Section 313 Supplier Notification: These chemicals are subject to the reporting requirements of Section 313 of the Emergency planning and Right-to-Know act of 1986 and of 40 CFR 372.
@ = Listed as a Clean Air Act Hazardous Air Pollutant.
# = EPCRA Section 302 - Extremely hazardous substances.

Notice:
The information on this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

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 3M

1357L

Henkel Corporation
710 Ohio Street
Buffalo, NY 14203
DOT EMERGENCY (860)571-5100
INFORMATION PHONE 800-888-4910M-F 7:30 AM 5:30 PM

H.M.I.S.
HEALTH 2 *
FLAMMABILITY 3
REACTIVITY 0
These ratings should be used as part of a fully implemented H.M.I.S. program.

MATERIAL SAFETY DATA SHEET

SECTION 1 - PRODUCT INFORMATION

DATE OF PREPARATION 1/22/07

TRADE NAME HYBOND 36 NATURAL PAIL/5GL PHYSICAL FORM: SOLVENT
MANUFACTURER CODE I.D. J9831D102

SECTION 2 - HAZARDOUS INGREDIENTS/COMPOSITION INFORMATION

INGREDIENT	% BY WGT	CAS NO.		PPM	MG/CU.M	ALLOWABLE EXPOSURE LEVEL	SARA 313	VP mm Hg @ 20 DEG.C
TOLUENE	18 20	108-88-3	TLV-TWA	50	188		SKIN	
			OSHA-PEL	200	752		SKIN X	22
			OSHA-STEL	300	1128	10 MIN		
			OSHA-CEIL	500	1880			
			LFL 1.7	UFL	7.1			
HEXANE	44 30	110-54-3	TLV-TWA	50	180		SKIN X	120
			OSHA-PEL	500	1800			
			LFL 1.0	UFL	8.0			
HEXANE ISOMERS		HM2116	TLV-TWA	500	1800			
			TLV-STEL	1000	3600			
METHYLCYCLOPENTANE		96-37-7	NONE ESTABLISHED					
ACETONE	22	67-64-1	TLV-TWA	500	1188			180
			TLV-STEL	750	1800			
			OSHA-PEL	750	1800			
			OSHA-STEL	1000	2400			
			LFL 2.6	UFL	13.0			

LFL = LOWER FLAMMABILITY LIMIT PERCENT
UFL = UPPER FLAMMABILITY LIMIT PERCENT
SKIN = SKIN ABSORPTION MUST BE CONSIDERED AS A ROUTE OF EXPOSURE
C-CEILING= ALLOW. EXPOSURE LEVEL SHOULD NOT BE EXCEEDED FOR ANY TIME PERIOD
MFR = MANUFACTURER RECOMMENDED EXPOSURE LIMIT
STEL = SHORT TERM EXPOSURE LIMIT
X-SARA 313 = CHEMICAL IS SUBJECT TO REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III OF S.A.R A. 40 CFR PART 372

SECTION 3 - HAZARDS IDENTIFICATION

EFFECTS OF SHORT TERM OVEREXPOSURE

SWALLOWING

Can cause gastrointestinal irritation, nausea, and vomiting. Aspiration of material into lung may cause chemical pneumonitis which can be fatal.

INHALATION

May cause nose or throat irritation. High concentrations may cause acute central nervous system depression characterized by headaches, dizziness,

nausea and confusion.

EYE

May cause eye irritation.

SKIN

May cause defatting and irritation of the skin.

EFFECTS OF REPEATED OVEREXPOSURE

Repeated overexposure to toluene may cause liver damage.
Repeated overexposure to n-hexane may cause damage to the peripheral nervous system.
Exposure to Methyl Ethyl Ketone may inhance the neurotoxicity of n-Hexane and Methyl-n-Butyl Ketone. This synergistic effect has resulted in peripheral neuropathy in humans.
Reports have associated prolonged and repeated occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

SIGNIFICANT LABORATORY DATA WITH POSSIBLE RELEVANCE TO HUMAN HEALTH.

Toluene has been found to cause kidney, lung and spleen damage in laboratory animals.

SECTION 4 - FIRST-AID MEASURES

SWALLOWING

If swallowed do not induce vomiting. (Never give anything by mouth to an unconscious person). Call Poison Control Center , Hospital Emergency Room, or Physician immediately.

INHALATION

Remove to fresh air immediately. If breathing has stopped, give artificial respiration. Keep warm and quiet. Get medical attention immediately.

EYE

Flush with large amounts of water, lifting upper and lower lids occasionally. Continue for at least 15 minutes. Get medical attention immediately.

SKIN

Remove contaminated clothing. Wash affected area with soap and water. Obtain medical attention if irritation persists.

NOTES TO PHYSICIAN

Any treatment that might be required for overexposure should be directed at the control of symptoms and the clinical conditions.

SECTION 5 - FIRE-FIGHTING MEASURES

NFPA FLAMMABILITY CLASSIFICATION FLAMMABLE LIQUID - CLASS IB

FLASHPOINT 1 DEG.F, (-17 DEG.C,) SFCC

EXTINGUISHING MEDIA

Use NFPA Class B Fire extinguishers (carbon dioxide, all purpose dry chemical or alcohol foam) designed to extinguish flammable liquid fires. Polymer foam is preferred for large fires.

UNUSUAL FIRE AND EXPLOSION HAZARDS

During emergency conditions, overexposure to decompostion products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.
DANGER! EXTREMELY FLAMMABLE. VAPORS MAY CAUSE FLASH FIRE.

SPECIAL FIRE FIGHTING PROCEDURES

Firefighters should wear self-contained breathing apparatus.
Water may be ineffective, but may be used to cool exposed containers to prevent pressure build-up and possible auto-ignition or explosion when exposed to extreme heat. If water is used, fog nozzles are preferable.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

Refer to Section 8 and don respirators, eye, hand, and body protection appropriate for the size of the spill and the exposures encountered. Keep spectators away. Eliminate all ignition sources (flames, hot surfaces, and sources of electrical, static or frictional sparks). Dike and contain spill with inert material (e.g. sand, earth). Transfer liquids to covered metal containers for recovery or disposal, or remove with inert absorbent. Use only non-sparking tools. Place absorbent diking materials in covered metal containers for disposal. Prevent contamination of sewers, streams, and groundwater with spilled material or used absorbent.

WASTE DISPOSAL

Dispose in accordance with federal, state and local regulations.

RCRA CLASSIFICATION

This product, if discarded directly, would be classified a hazardous waste based on its ignitability characteristic, i.e. has a flash point of 140 deg. F.(60 deg.C) or less. The proper RCRA classification would be D001.

ENVIRONMENTAL HAZARDS

None known

SECTION 7 - HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Do not store above 115 deg.F (46 deg.C) store large quantities in compliance with OSHA 29CFR1910.106.

OTHER PRECAUTIONS

Do not take internally. Close container after each use. Avoid skin contact. Empty containers must not be washed and re-used for any purpose. Containers should be grounded and bonded to the receiving container. Do not weld, braze or cut on empty container. Never use pressure to empty. Drum is not a pressure vessel.

SECTION 8 - EXPOSURE CONTROLS

RESPIRATORY PROTECTION

Proper selection of respiratory protection depends upon many factors including duration and level of exposure and conditions of use. In general exposure to organic chemicals such as those contained in this product may not require the use of respiratory protection if used in well ventilated areas. In areas of restricted ventilation a NIOSH approved organic vapor respirator may be required. Under certain conditions, such as spraying, a mechanical prefilter may also be required. In confined areas or in high exposure situations a NIOSH/MSHA approved air supplied respirator may be required. If the TLV's or PEL's listed in Section II are exceeded use a properly fitted NIOSH/MSHA approved respirator with an appropriate protection factor. Refer to OSHA 29 CFR 1910.134 "Respiratory Protection", and "Respiratory Protection a Manual and Guideline, American Industrial Hygiene Association".

VENTILATION

Use general dilution and local exhaust ventilation in sufficient volume and pattern to keep concentrations of hazardous ingredients listed in Section II below the lowest exposure limit stated. Fumes emitted while baking this product must be properly vented. Refer to "Industrial Ventilation a Manual of Recommended Practice"-ACGIH.

HAND PROTECTION

Solvent impermeable gloves are required for immediate or prolonged contact. Refer to glove manufacturer's recomendations and specifications.

EYE PROTECTION

Wear safety glasses meeting the specifications of ANSI Z87.1 where no contact with the eye is anticipated. Chemical safety goggles meeting the

specifications of ANSI Z87.1 should be worn whenever there is a possibility of splashing or other contact with the eyes.

OTHER PROTECTIVE EQUIPMENT

Eyewash facility, safety shower.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

BOILING RANGE 130 DEG.F. (54 DEG.C.) TO 233 DEG.F. (112 DEG.C.)
VAPOR DENSITY % VOLATILE BY VOLUME 88
Heavier than air.
EVAPORATION RATE
Slower than diethyl ether.
VOC 5.86 LB/GAL LESS WATER & NPRS* 703 G/L LESS WATER CALCULATED
WGT LB/GAL 6.6 VOC 38.84 LB/GAL SOLIDS 4661 G/L SOLIDS CALCULATED
SPECIFIC GRAVITY 0.8
All Physical data determined at 68 DEG. F. (20 DEG. C.) 760 mm Hg
* Negligibly Photochemically Reactive Materials

SECTION 10 - STABILITY AND REACTIVITY

STABILITY
Normally stable.
CONDITIONS TO AVOID
Avoid excessive heat (>115 F (46 C) and sources of ignition.
INCOMPATABILITY (MATERIALS TO AVOID)
Strong acids or alkaline materials.
HAZARDOUS DECOMPOSITION PRODUCTS
Burning, including when heated by welding or cutting, will produce smoke, carbon monoxide and carbon dioxide.
HAZARDOUS POLYMERIZATION
Will not occur
CONDITIONS TO AVOID
None known

SECTION 11 - TOXICOLOGICAL INFORMATION

No information available.

SECTION 12 - ECOLOGICAL INFORMATION

No information available.

SECTION 13 - DISPOSAL CONSIDERATIONS

See Section 6.

SECTION 14 - TRANSPORT INFORMATION

ITEM: J9831D102 DESC/SIZE: HYBOND 36 NATURAL PAIL/5GL

MODE	PROPER SHIPPING NAME	CLASS	I.D.#	PKG GRP
IATA (AIR)	PROHIBITED			
DOT (HM-181) (DOMESTIC SURFACE)	ADHESIVES NAERG: 128	3	UN1133	II
IMDG CODE (OCEAN)	ADHESIVES	3	UN1133	II

NOTE! The assignment of Proper Shipping Names is in part a function of the size of the product container and the transport mode. For example, the Proper Shipping Name for a bulk container can differ significantly from the

Proper Shipping Name for the same product packaged in a non-bulk container. This can also be true for products shipped via different modes of transportation (i.e. ground, air, ocean). The descriptions provided above are intended to provide some guidance. However, these descriptions may not apply to your package size or mode of shipment.
The U.S. Code of Federal Regulations, 49 CFR - Transportation, regulations, and the policies established by some transporters, require that the shipper properly classify and assign a Proper Shipping Name, and label, mark and package the material properly. Therefore, the user of this information is cautioned to consult with applicable regulations, and with qualified advisors prior to the repackaging and or reshipment of this or other any product which contain this product.

SECTION 15 - REGULATORY INFORMATION

All ingredients in this product are listed on the US TSCA Inventory.

WARNING: This product contains
TOLUENE;
a chemical known to the State of California to cause birth defects or other reproductive harm.

INGREDIENT	CAS NO.	DETAIL INVENTORY LIST INFORMATION
TOLUENE	108-88-3	TSCA(8a CAIR) TSCA(8a PAIR) TSCA(8d) DSL
HEXANE	110-54-3	TSCA(12b) TSCA(4) DSL
HEXANE ISOMERS	HM2116	DSL
METHYLCYCLOPENTANE	96-37-7	TSCA(12b) TSCA(4) TSCA(8a PAIR) TSCA(8d) TSCA(8d term) DSL
ACETONE	67-64-1	TSCA(4) DSL

DETAIL INVENTORY LIST DESCRIPTION

TSCA
Toxic Substances Control Act
12b
Notices of Export
4
Test Rules
8a CAIR
Comprehensive Assessment Information Rules
8a PAIR
Preliminary Assesment Information Rules
8d
Health and Safety Reporting Rules
8d term
Health and Safety Reporting Rules termination
DSL

Canadian Domestic Substance List

SECTION 16 - OTHER INFORMATION

DISCLAIMER: The data contained herein are furnished for information only and are believed to be reliable. However, Henkel Corporation does not assume responsibility for any results obtained by persons over whose methods Henkel Corporation has no control. It is the user's responsibility to determine the suitability of Henkel's products or any production methods mentioned herein for a particular purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of any of Henkel Corporation's products. In light of the foregoing, Henkel Corporation specifically disclaims all warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, arising from sale or use of Henkel Corporation's products. Henkel Corporation further disclaims any liability for consequential or incidental damages of any kind, including lost profits.

For Safety and Regulatory Information contact:
Product Safety and Regulatory Affairs,
Rocky Hill, CT
860-571-5204

WESTERN AIRCRAFT
TERRY
BUFFALO NY
14203

Henkel Corporation

CERTIFIED PRODUCT DATA SHEET

(Properties of materials "as supplied" by the manufacturer)

Manufacturer's Name: HENKEL CORPORATION — Date: 2/07/08

Customer's Material Code:

Product I.D. Name/Number: J9831D — CUST#:

Product Description: NEOPRENE CONTACT CEMENT NATURA

Person Preparing Data Sheet / Phone Number: Bryant Winterholer (603) 474-7177

VOC 5.86 LB/GAL LESS WATER & NPRS* 703 G/L LESS WATER <--CALCULATED
WGT LB/GAL 6.6 VOC 38.84 LB/GAL/SOLIDS 4,661 G/L SOLIDS <--CALCULATED
2.92 lb VHAP/lb Solids

A. Density (Dc)s:	6.6	lbs./gal.			
B. Total Volatiles (Wv)s:	84.11	Weight Percent	88	Volume Percent	
C. Water Content (Ww)s:	.28	Weight Percent	0	Volume Percent	
D. Organic Volatiles (Wo)s: Excluding Exempts	61.60	Weight Percent	64	Volume Percent	
Organic Volatiles (Wo)s: Including Exempts	83.83	Weight Percent	88	Volume Percent	
E. Nonvolatile Content (Wn)s:	15.88	Weight Percent	11	Volume Percent	
F. Total HAP Content (HAP)s:	46.31	Weight Percent			
G. Total VHAP Content (Wn)s:	46.31	Weight Percent	54	Volume Percent	

ASTM D1475 [X]
other (2) [ ]
ASTM D2369 [ ]
other (2a) [X]
ASTM D3792 [ ]
ASTM D4017 [ ]
other (2b) [X]

H. Constituents (List all VOC's, HAP's (3), SARA 313 Chemicals)

List Method Used: Formulation [X] Method 311 [ ]

VOC, HAP, SARA 313 Ingredients	VOC	HAP	SARA 313	CAS Number	Target Weight Percent (4) Volatiles	Target Weight Percent Non-Volatiles	Density (lbs./gal.)
TOLUENE	Y	Y	Y	108-88-3	18.00		7.26
HEXANE	Y	Y	Y	110-54-3	28.31		5.50
CYCLOHEXANE	Y		Y	110-82-7	44		6.75
HEXANE ISOMERS	Y			HM2116	9.15		6.75
METHYLCYCLOPENTANE	Y			96-37-7	5.66		6.75
TOTALS:------->					61.56		

(1) The subscript "s" denotes each value is for the ink or coating "as supplied" by the manufacturer.
(2) Explain the other method used in an attachment to this form.
(2a) 105 C +/- 1 C 1-3hrs 1 gram +/- 0.1. (2b) Typically not applicable. D3792 or D4017 are used when required.
(3) HAP must be reported if present at 0.1% or greater. VHAP – Volatile HAP
(4) Organic volatiles must total item D above. The sum of this column is rounded to the nearest .1 in item D above.

FEES RECEIVED FROM FACILITY

Date Stamp (date received in PO)	RECEIVED FEB 12 2008 Department of Environmental Quality State Air Program
Facility Name	Western Aircraft
Facility Location	Boise
Fee Type (PTC Application, PTC Processing, T2 Processing)	PTC Application Fee AND PTC PROCESSING FEE
Check Number	# 31720
Check Date	2/8/08
Check Amount	