



STANDARD HARDENER (S2032-US)

Safety Data Sheet S2032-US

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 08/10/2015

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Supersedes: 08/10/2015

Version: 2.0

DRIVING SURFACE PERFECTION

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : STANDARD HARDENER (S2032-US)
Product group : 2K Hardener
Other means of identification : UP2323, UP2325

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.3. Details of the supplier of the safety data sheet

Supplier

U-POL US Inc
108 Commerce Way
Stockertown PA 18083 - USA
T 1-800-340-7824 - F 1-800-787-5150
technical.department@u-pol.com - www.u-pol.com

1.4. Emergency telephone number

Emergency number : CHEMTREC - 1-800-424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Flam. Liq. 3 H226
Skin Irrit. 2 H315
Skin Sens. 1 H317
Carc. 2 H351
STOT SE 3 H335
STOT SE 3 H336
STOT RE 2 H373

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Warning

Hazard statements (GHS-US) :

H226 - Flammable liquid and vapor
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H335 - May cause respiratory irritation
H336 - May cause drowsiness or dizziness
H351 - Suspected of causing cancer
H373 - May cause damage to organs (hearing organs) through prolonged or repeated exposure (Inhalation)

Precautionary statements (GHS-US) :

P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking.
P260 - Do not breathe vapours, fume, spray.
P264 - Wash hands thoroughly after handling.
P280 - Wear face protection, protective clothing, protective gloves.
P308+P313 - If exposed or concerned: Get medical advice/attention.
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P501 - Dispose of contents/container to hazardous or special waste collection point, in

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accordance with local, regional, national and/or international regulation

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS-US classification
Hexamethylene Diisocyanate Oligomers	(CAS-No.) 28182-81-2	23-43	Acute Tox. 4 (Inhalation), H332 Skin Sens. 1, H317 STOT SE 3, H335
n-butyl acetate	(CAS-No.) 123-86-4	5-23	Flam. Liq. 3, H226 STOT SE 3, H336
xylene	(CAS-No.) 1330-20-7	5 - 23	Flam. Liq. 3, H226 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Irrit. 2, H315
ethylbenzene	(CAS-No.) 100-41-4	5 - 23	Flam. Liq. 2, H225 Acute Tox. 4 (Inhalation), H332 Carc. 2, H351 STOT RE 2, H373 Asp. Tox. 1, H304
Solvent naphtha (petroleum), light aromatic		< 5	Flam. Liq. 3, H226 STOT SE 3, H336 STOT SE 3, H335 Asp. Tox. 1, H304 Aquatic Chronic 2, H411

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : IF exposed or concerned: Get medical advice/attention.
- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor/physician if you feel unwell.
- First-aid measures after skin contact : Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
- First-aid measures after eye contact : Rinse eyes with water as a precaution.
- First-aid measures after ingestion : Call a poison center/doctor/physician if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/effects : May cause drowsiness or dizziness.
- Symptoms/effects after inhalation : May cause respiratory irritation.
- Symptoms/effects after skin contact : Irritation. May cause an allergic skin reaction.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.
- Unsuitable extinguishing media : Water.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Flammable liquid and vapor.
- Reactivity : Flammable liquid and vapor.

5.3. Advice for firefighters

- Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Protective clothing. Safety glasses. Gloves.
Emergency procedures : Ventilate spillage area. No open flames, no sparks, and no smoking. Do not breathe vapors, fume, spray. Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Contain leaking substance. Collect spillage.
Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Flammable vapors may accumulate in the container. Use explosion-proof equipment. Wear personal protective equipment. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe vapors, spray, fume. Use only outdoors or in a well-ventilated area. Avoid contact with skin and eyes.
Hygiene measures : Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Ground/bond container and receiving equipment.
Storage conditions : Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.
Storage temperature : < 25 °C
Storage area : Store in well ventilated area.
Special rules on packaging : Keep only in original container.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

STANDARD HARDENER (S2032-US)		
ACGIH	Not applicable	
OSHA	Not applicable	
n-butyl acetate (123-86-4)		
ACGIH	ACGIH TWA (ppm)	150 ppm
ACGIH	ACGIH STEL (ppm)	200 ppm
ACGIH	Remark (ACGIH)	Eye & URT irr
OSHA	OSHA PEL (TWA) (mg/m ³)	710 mg/m ³
OSHA	OSHA PEL (TWA) (ppm)	150 ppm
ethylbenzene (100-41-4)		
ACGIH	ACGIH TWA (ppm)	20 ppm

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ethylbenzene (100-41-4)		
ACGIH	Remark (ACGIH)	URT irr; kidney dam (nephropathy)
OSHA	OSHA PEL (TWA) (mg/m ³)	435 mg/m ³
OSHA	OSHA PEL (TWA) (ppm)	100 ppm

xylene (1330-20-7)		
ACGIH	ACGIH TWA (ppm)	100 ppm
ACGIH	ACGIH STEL (ppm)	150 ppm
ACGIH	Remark (ACGIH)	URT & eye irr; CNS impair
OSHA	OSHA PEL (TWA) (mg/m ³)	435 mg/m ³
OSHA	OSHA PEL (TWA) (ppm)	100 ppm

Hexamethylene Diisocyanate Oligomers (28182-81-2)		
ACGIH	Not applicable	
OSHA	Not applicable	

Solvent naphtha (petroleum), light aromatic		
ACGIH	Not applicable	
OSHA	Not applicable	

8.2. Exposure controls

Appropriate engineering controls : Ensure good ventilation of the work station.
Personal protective equipment : Gas mask. Gloves. Protective clothing. Safety glasses.



Materials for protective clothing : Impermeable clothing.
Hand protection : Protective gloves.
Eye protection : Safety glasses.
Skin and body protection : Wear suitable protective clothing.
Respiratory protection : Air-fed respiratory protective equipment should be worn when this product is sprayed.
Environmental exposure controls : Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid
Appearance : Liquid.
Color : Colorless
Odor : aromatic
Odor threshold : No data available
pH : No data available
Relative evaporation rate (butyl acetate=1) : No data available
Melting point : Not applicable
Freezing point : No data available
Boiling point : > 35 °C
Flash point : 30 °C
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Flammability (solid, gas) : No data available
Vapor pressure : No data available
Relative vapor density at 20 °C : No data available

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Relative density	: No data available
Specific gravity / density	: 0.98 - 1 g/cm ³
Solubility	: insoluble in water. soluble in most organic solvents.
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosion limits	: No data available

9.2. Other information

VOC content - Actual	: 624 g/l
VOC content - Regulatory	: 624 g/l

SECTION 10: Stability and reactivity

10.1. Reactivity

Flammable liquid and vapor.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

n-butyl acetate (123-86-4)	
LD50 oral rat	> 21 mg/kg
ethylbenzene (100-41-4)	
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h
xylene (1330-20-7)	
ATE US (dermal)	1100 mg/kg body weight
ATE US (dust, mist)	1.5 mg/l/4h
Hexamethylene Diisocyanate Oligomers (28182-81-2)	
LD50 oral rat	> 2500 mg/kg
LD50 dermal rat	> 2000 mg/kg
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h

Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Suspected of causing cancer.

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ethylbenzene (100-41-4)	
IARC group	2B - Possibly carcinogenic to humans
xylene (1330-20-7)	
IARC group	3 - Not classifiable

Reproductive toxicity	: Not classified
Specific target organ toxicity – single exposure	: May cause respiratory irritation. May cause drowsiness or dizziness.
Specific target organ toxicity – repeated exposure	: May cause damage to organs (hearing organs) through prolonged or repeated exposure (Inhalation).
Aspiration hazard	: Not classified
Symptoms/effects after inhalation	: May cause respiratory irritation.
Symptoms/effects after skin contact	: Irritation. May cause an allergic skin reaction.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.
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12.2. Persistence and degradability

Solvent naphtha (petroleum), light aromatic

Persistence and degradability	May cause long-term adverse effects in the environment.
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12.3. Bioaccumulative potential

Solvent naphtha (petroleum), light aromatic

Bioaccumulative potential	Not established.
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12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on ozone layer	: No additional information available
Effect on the global warming	: No known effects from this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste)	: Disposal must be done according to official regulations.
Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Additional information	: Flammable vapors may accumulate in the container.

SECTION 14: Transport information

In accordance with DOT	
Transport document description	: UN1263 Paint related material (including paint thinning, drying, removing, or reducing compound), 3, III
UN-No.(DOT)	: UN1263
Proper Shipping Name (DOT)	: Paint related material including paint thinning, drying, removing, or reducing compound
Class (DOT)	: 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120

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Hazard labels (DOT) : 3 - Flammable liquid



Packing group (DOT) : III - Minor Danger

DOT Special Provisions (49 CFR 172.102) : B1 - If the material has a flash point at or above 38 C (100 F) and below 93 C (200 F), then the bulk packaging requirements of 173.241 of this subchapter are applicable. If the material has a flash point of less than 38 C (100 F), then the bulk packaging requirements of 173.242 of this subchapter are applicable.
B52 - Notwithstanding the provisions of 173.24b of this subchapter, non-reclosing pressure relief devices are authorized on DOT 57 portable tanks.
IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672).
T2 - 1.5 178.274(d)(2) Normal..... 178.275(d)(3)
TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / 1 + a (tr - tf)$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.
TP29 - A portable tank having a minimum test pressure of 1.5 bar (150.0 kPa) may be used provided the calculated test pressure is 1.5 bar or less based on the MAWP of the hazardous materials, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.

DOT Packaging Exceptions (49 CFR 173.xxx) : 150

DOT Packaging Non Bulk (49 CFR 173.xxx) : 173

DOT Packaging Bulk (49 CFR 173.xxx) : 242

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 60 L

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 220 L

DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

Additional information

Other information : No supplementary information available.

ADR

Transport document description : UN 1263 PAINT RELATED MATERIAL, 3, III, (D/E)

Packing group (ADR) : III

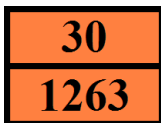
Class (ADR) : 3 - Flammable liquid

Hazard identification number (Kemler No.) : 30

Classification code (ADR) : F1

Hazard labels (ADR) : 3 - Flammable liquids



Orange plates : 

The orange plate is rectangular with a black border. It is divided into two horizontal sections. The top section contains the number "30" in black, and the bottom section contains the number "1263" in black.

Tunnel restriction code (ADR) : D/E

LQ : 5I

Excepted quantities (ADR) : E1

Transport by sea

UN-No. (IMDG) : 1263

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Proper Shipping Name (IMDG)	: PAINT RELATED MATERIAL
Class (IMDG)	: 3 - Flammable liquids
Packing group (IMDG)	: III - substances presenting low danger

Air transport

UN-No. (IATA)	: 1263
Proper Shipping Name (IATA)	: Paint
Class (IATA)	: 3 - Flammable Liquids
Packing group (IATA)	: III - Minor Danger

SECTION 15: Regulatory information

15.1. US Federal regulations

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

ethylbenzene	CAS-No. 100-41-4	5 - 23%
xylene	CAS-No. 1330-20-7	5 - 23%
hexamethylene-di-isocyanate	CAS-No. 822-06-0	< 5%

n-butyl acetate (123-86-4)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Not subject to reporting requirements of the United States SARA Section 313

CERCLA RQ	5000 lb
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ethylbenzene (100-41-4)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Subject to reporting requirements of United States SARA Section 313

CERCLA RQ	1000 lb
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SARA Section 313 - Emission Reporting	0.1 %
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xylene (1330-20-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Subject to reporting requirements of United States SARA Section 313

CERCLA RQ	100 lb
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SARA Section 313 - Emission Reporting	1 %
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Hexamethylene Diisocyanate Oligomers (28182-81-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Solvent naphtha (petroleum), light aromatic

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

STANDARD HARDENER (S2032-US)

WHMIS Classification	Class B Division 2 - Flammable Liquid
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n-butyl acetate (123-86-4)

Listed on the Canadian DSL (Domestic Substances List)

ethylbenzene (100-41-4)

Listed on the Canadian DSL (Domestic Substances List)

xylene (1330-20-7)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flam. Liq. 3 H226

Skin Irrit. 2 H315

Skin Sens. 1 H317

STOT SE 3 H335

STOT SE 3 H336

Full text of hazard classes and H-statements : see section 16

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Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

15.2.2. National regulations

ethylbenzene (100-41-4)
Listed on IARC (International Agency for Research on Cancer) Listed on EPA Hazardous Air Pollutant (HAPS)
xylene (1330-20-7)
Listed on EPA Hazardous Air Pollutant (HAPS)
Solvent naphtha (petroleum), light aromatic
Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

15.3. US State regulations

California Proposition 65 - This product contains, or may contain, trace quantities of a substance(s) known to the state of California to cause cancer, developmental and/or reproductive harm

ethylbenzene (100-41-4)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
Yes	No	No	No	54 µg/day

SECTION 16: Other information

Revision date : 10/25/2017

Full text of H-phrases:

H225	Highly flammable liquid and vapour
H226	Flammable liquid and vapor
H304	May be fatal if swallowed and enters airways
H312	Harmful in contact with skin
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H332	Harmful if inhaled
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H351	Suspected of causing cancer
H373	May cause damage to organs through prolonged or repeated exposure
H411	Toxic to aquatic life with long lasting effects

NFPA health hazard

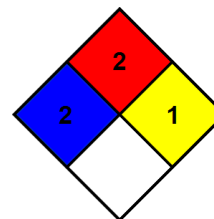
: 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

NFPA fire hazard

: 2 - Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur.

NFPA reactivity

: 1 - Materials that in themselves are normally stable but can become unstable at elevated temperatures and pressures.



SDS US UPOL

For professional use only.

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