SunChemical®

Material Safety Data Sheet

1 . Product and company identification

Product code : PD-O50

Product name : ORANGE

Material uses : Printing.

Manufacturer/ Distributor : Sun Chemical Corporation
631 Central Avenue
Carlstadt, NJ 07072

In case of emergency : (800) 424-9300 (U.S.)
(703) 527-3887 (International)

Regulatory information : Canada: (905) 796-2222
US: (201) 933-4500

Other information : (513) 830-8500

Date of revision : ***.

2 . Hazards identification

Physical state : Liquid.

Color : Orange. *** ***

OSHA/HCS status
This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Emergency overview : WARNING !

CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION.
MAY CAUSE ALLERGIC SKIN REACTION.
MAY BE HARMFUL IF ABSORBED THROUGH SKIN OR IF SWALLOWED.
CONTAINS MATERIAL WHICH MAY CAUSE DAMAGE TO THE FOLLOWING ORGANS: KIDNEYS, LIVER.

Do not ingest. Avoid prolonged contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.

Routes of entry
Dermal contact. Inhalation.

Potential acute health effects

Eyes : Irritating to eyes.

Skin : Harmful in contact with skin. Irritating to skin. May cause sensitization by skin contact.

Inhalation : Irritating to respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion : Harmful if swallowed.

Potential chronic health effects

Carcinogenic effects : No known significant effects or critical hazards.

Mutagenic effects : No known significant effects or critical hazards.

Teratogenicity / Reproductive toxicity : No known significant effects or critical hazards.

Medical conditions aggravated by over-exposure : Pre-existing skin and digestive disorders and disorders involving any other target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (section 11)

2 . Hazards identification

3 . Composition/information on ingredients

Hazardous ingredients	CAS number	%
Isobornyl Acrylate	5888-33-5	10 - 25
N-Vinylpyrrolidone	88-12-0	10 - 25
2-Phenoxy-ethyl acrylate	48145-04-6	5 - 10
Aliphatic Urethane Acrylate	CN966	5 - 10
2-Hydroxy-2-Methyl-1-Phenyl-1-Propanone	7473-98-5	5 - 10
Proprietary initiator	Proprietary	1 - 2.5

4 . First aid measures

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
In case of accidental eye contact, avoid concurrent exposure to the sun or other sources of UV light which may increase the sensitivity of the eyes.

Skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
In case of accidental skin contact, avoid concurrent exposure to the sun or other sources of UV light which may increase the sensitivity of skin.

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

5 . Fire-fighting measures

Flammability of the product : In a fire or if heated, a pressure increase will occur and the container may burst.

Products of combustion : Decomposition products may include the following materials:
carbon oxides
nitrogen oxides
phosphorus oxides
halogenated compounds
metal oxide/oxides

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

5 . Fire-fighting measures

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Flammability (OSHA criteria) : IIIB

Flash point : Closed cup: 110°C (230°F)

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Keep away from direct sunlight or strong incandescent light.

8 . Exposure controls/personal protection

Product name	Exposure limits
N-Vinylpyrrolidone	**ACGIH TLV (United States, 1/2008).** TWA: 0.05 ppm 8 hour(s).

Consult local authorities for acceptable exposure limits.

Engineering measures : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Personal protection

8 . Exposure controls/personal protection

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

9 . Physical and chemical properties

Physical state : Liquid.

Color : Orange.

Boiling/condensation point : Lowest known value: 217°C (423°F)

Flash point : Closed cup: 110°C (230°F)

VOC : 0.03%

Density : 1.097 g/cm^3 [9.152 lbs/gal)

Vapor density : Highest known value: 3.8 (Air = 1) (N-Vinylpyrrolidone). Weighted average: 3.19 (Air = 1)

Evaporation rate : Highest known value: <1 (N-Vinylpyrrolidone) Weighted average: 0.9compared with butyl acetate

10 . Stability and reactivity

Stability and reactivity : The product is stable.

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

Reactivity - Light : May polymerize on exposure to light.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
N-Vinylpyrrolidone	LD50 Dermal	Rabbit	560 mg/kg	-
	LD50 Oral	Rat	1470 mg/kg	-
	LC50 Inhalation Vapor	Rat	3200 mg/m3	4 hours
2-Hydroxy-2-Methyl-1-Phenyl-1-Propanone	LD50 Dermal	Rat	6929 mg/kg	-
	LD50 Intraperitoneal	Rat	824 mg/kg	-
	LD50 Oral	Rat	1694 mg/kg	-
2-propenoic acid, 2-phenoxyethyl ester	LD50 Dermal	Rabbit	2540 uL/kg	-
	LD50 Intraperitoneal	Rat	900 mg/kg	-
	LD50 Oral	Rat	4660 uL/kg	-
Isobornyl Acrylate	LD50 Dermal	Rabbit	>5 gm/kg	-

11 . Toxicological information

	LD50 Oral	Rat	4890 mg/kg	-

Conclusion/Summary : No known significant effects or critical hazards.

Chronic toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
N-Vinylpyrrolidone	A3	3	-	-	-	-

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Conclusion/Summary : Not available.

Biodegradability

Conclusion/Summary : Not available.

Other adverse effects : No known significant effects or critical hazards.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Refer to protective measures listed in sections 7 and 8.
Empty containers or liners may retain some product residues.

14 . Transport information

Not regulated.

15 . Regulatory information

HCS Classification : Irritating material
Sensitizing material
Target organ effects

TSCA 8(b) inventory : Listed

U.S. Federal regulations : TSCA 4(a) dioxins/furanes testing: No products were found.
TSCA 4(a) final testing order: No products were found.
TSCA 4(a) final test rules: 4-Methoxyphenol
TSCA 4(a) ITC priority list: No products were found.

15 . Regulatory information

TSCA 4(a) proposed test rules: No products were found.
TSCA 5(a)2 final significant rules: No products were found.

TSCA 5(a)2 proposed significant rules: No products were found.
TSCA 5(e) substance consent order: No products were found.
TSCA 6 final risk management: No products were found.
TSCA 6 proposed risk management: No products were found.
TSCA 8(a) CAIR: No products were found.
TSCA 8(a) chemical risk rules: No products were found.
TSCA 8(a) dioxin/furan precursor: No products were found.
TSCA 8(a) IUR: No products were found.
TSCA 8(a) PAIR: 4-Methoxyphenol
TSCA 8(c) calls for record of SAR: No products were found.
TSCA 8(d) H and S data reporting: No products were found.
TSCA 12(b) annual export notification: No products were found.
TSCA 12(b) one-time export: 4-Methoxyphenol
TSCA precursor chemical list: No products were found.
TSCA commerce control list: No products were found.

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: N-Vinylpyrrolidone
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: N-Vinylpyrrolidone: Fire hazard, Immediate (acute) health hazard; Talc ($Mg_3H_2(SiO_3)_4$): Immediate (acute) health hazard

Clean Water Act (CWA) 307: toluene
Clean Water Act (CWA) 311: toluene

Clean Air Act (CAA) 112 accidental release prevention: No products were found.
Clean Air Act (CAA) 112 regulated flammable substances: No products were found.
Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

SARA 313

		Product name	CAS number	Concentration
Form R - Reporting requirements	:	Glycol Ethers	48145-04-6	9.8421

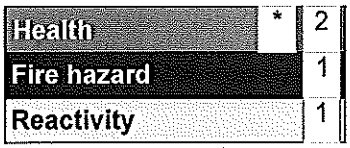
SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

CONEG : In compliance.

16 . Other information

Label requirements : CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. MAY BE HARMFUL IF ABSORBED THROUGH SKIN OR IF SWALLOWED. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.

Hazardous Material Information System (U.S.A.) :



Personal protection

Version : **1.04**

Notice to reader

16 . Other information

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

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SunChemical®

Material Safety Data Sheet

1 . Product and company identification

Product code	:	PD-R20
Product name	:	SCARLET
Material uses	:	Printing.
Manufacturer/ Distributor	:	Sun Chemical Corporation 631 Central Avenue Carlstadt, NJ 07072
In case of emergency	:	(800) 424-9300 (U.S.) (703) 527-3887 (International)
Regulatory information	:	Canada: (905) 796-2222 US: (201) 933-4500
Other information	:	(513) 830-8500
Date of revision	:	***.

2 . Hazards identification

Physical state : Liquid.

Color : Red. *** ***

OSHA/HCS status

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

Emergency overview : WARNING !

CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION.
MAY CAUSE ALLERGIC SKIN REACTION.
MAY BE HARMFUL IF ABSORBED THROUGH SKIN OR IF SWALLOWED.
CONTAINS MATERIAL WHICH MAY CAUSE DAMAGE TO THE FOLLOWING ORGANS: KIDNEYS, LIVER.

Do not ingest. Avoid prolonged contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.

Routes of entry

Dermal contact. Inhalation.

Potential acute health effects

Eyes	:	Irritating to eyes.
Skin	:	Harmful in contact with skin. Irritating to skin. May cause sensitization by skin contact.
Inhalation	:	Irritating to respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Ingestion	:	Harmful if swallowed.

Potential chronic health effects

Carcinogenic effects	:	No known significant effects or critical hazards.
Mutagenic effects	:	No known significant effects or critical hazards.
Teratogenicity / Reproductive toxicity	:	No known significant effects or critical hazards.
Medical conditions aggravated by over-exposure	:	Pre-existing skin and digestive disorders and disorders involving any other target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (section 11)

2 . Hazards identification

3 . Composition/information on ingredients

Hazardous ingredients	CAS number	%
Isobornyl Acrylate	5888-33-5	10 - 25
N-Vinylpyrrolidone	88-12-0	10 - 25
2-Phenoxy-ethyl acrylate	48145-04-6	5 - 10
Aliphatic Urethane Acrylate	CN966	5 - 10
2-Hydroxy-2-Methyl-1-Phenyl-1-Propanone	7473-98-5	5 - 10
Proprietary initiator	Proprietary	1 - 2.5

4 . First aid measures

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
In case of accidental eye contact, avoid concurrent exposure to the sun or other sources of UV light which may increase the sensitivity of the eyes.

Skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
In case of accidental skin contact, avoid concurrent exposure to the sun or other sources of UV light which may increase the sensitivity of skin.

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

5 . Fire-fighting measures

Flammability of the product : In a fire or if heated, a pressure increase will occur and the container may burst.

Products of combustion : Decomposition products may include the following materials:
carbon oxides
nitrogen oxides
phosphorus oxides
halogenated compounds
metal oxide/oxides

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

5 . Fire-fighting measures

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Flammability (OSHA criteria) : IIIB

Flash point : Lowest known value: >93.3°C (200°F) (Closed cup)

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Keep away from direct sunlight or strong incandescent light.

8 . Exposure controls/personal protection

Product name	Exposure limits
N-Vinylpyrrolidone	**ACGIH TLV (United States, 1/2008).** TWA: 0.05 ppm 8 hour(s).

Consult local authorities for acceptable exposure limits.

Engineering measures : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Personal protection

8 . Exposure controls/personal protection

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

9 . Physical and chemical properties

Physical state : Liquid.

Color : Red.

Boiling/condensation point : Lowest known value: 217°C (423°F)

Flash point : Lowest known value: >93.3°C (200°F) (Closed cup)

VOC : 0.03%

Density : 1.093 g/cm^3 (9.117 lbs/gal)

Vapor density : Highest known value: 3.8 (Air = 1) (N-Vinylpyrrolidone). Weighted average: 3.19 (Air = 1)

Evaporation rate : Highest known value: <1 (N-Vinylpyrrolidone) Weighted average: 0.9compared with butyl acetate

10 . Stability and reactivity

Stability and reactivity : The product is stable.

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

Reactivity - Light : May polymerize on exposure to light.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
2-Hydroxy-2-Methyl-1-Phenyl-1-Propanone	LD50 Dermal	Rat	6929 mg/kg	-
	LD50 Intraperitoneal	Rat	824 mg/kg	-
	LD50 Oral	Rat	1694 mg/kg	-
2-propenoic acid, 2-phenoxyethyl ester	LD50 Dermal	Rabbit	2540 uL/kg	-
	LD50 Intraperitoneal	Rat	900 mg/kg	-
	LD50 Oral	Rat	4660 uL/kg	-
Isobornyl Acrylate	LD50 Dermal	Rabbit	>5 gm/kg	-
	LD50 Oral	Rat	4890 mg/kg	-
N-Vinylpyrrolidone	LD50 Dermal	Rabbit	560 mg/kg	-
	LD50 Oral	Rat	1470 mg/kg	-
	LC50 Inhalation	Rat	3200 mg/m3	4 hours

11 . Toxicological information

Vapor

Conclusion/Summary : No known significant effects or critical hazards.

Chronic toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
N-Vinylpyrrolidone	A3	3	-	-	-	-

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Conclusion/Summary : Not available.

Biodegradability

Conclusion/Summary : Not available.

Other adverse effects : No known significant effects or critical hazards.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Refer to protective measures listed in sections 7 and 8.
Empty containers or liners may retain some product residues.

14 . Transport information

Not regulated.

15 . Regulatory information

HCS Classification : Irritating material
Sensitizing material
Target organ effects

TSCA 8(b) inventory : Listed

U.S. Federal regulations : TSCA 4(a) dioxins/furanes testing: No products were found.
TSCA 4(a) final testing order: No products were found.
TSCA 4(a) final test rules: 4-Methoxyphenol
TSCA 4(a) ITC priority list: No products were found.

15 . Regulatory information

TSCA 4(a) proposed test rules: No products were found.
TSCA 5(a)2 final significant rules: No products were found.

TSCA 5(a)2 proposed significant rules: No products were found.
TSCA 5(e) substance consent order: No products were found.
TSCA 6 final risk management: No products were found.
TSCA 6 proposed risk management: No products were found.
TSCA 8(a) CAIR: No products were found.
TSCA 8(a) chemical risk rules: No products were found.
TSCA 8(a) dioxin/furan precursor: No products were found.
TSCA 8(a) IUR: No products were found.
TSCA 8(a) PAIR: 4-Methoxyphenol
TSCA 8(c) calls for record of SAR: No products were found.
TSCA 8(d) H and S data reporting: No products were found.
TSCA 12(b) annual export notification: No products were found.
TSCA 12(b) one-time export: 4-Methoxyphenol
TSCA precursor chemical list: No products were found.
TSCA commerce control list: No products were found.

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: N-Vinylpyrrolidone
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Talc (Mg3H2(SiO3)4): Immediate (acute) health hazard; N-Vinylpyrrolidone: Fire hazard, Immediate (acute) health hazard

Clean Water Act (CWA) 307: toluene
Clean Water Act (CWA) 311: toluene

Clean Air Act (CAA) 112 accidental release prevention: No products were found.
Clean Air Act (CAA) 112 regulated flammable substances: No products were found.
Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

SARA 313

		Product name	CAS number	Concentration
Form R - Reporting requirements	:	Glycol Ethers	48145-04-6	9.8421

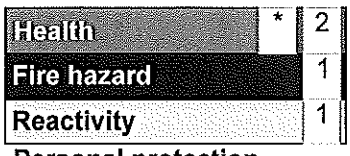
SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

CONEG : In compliance.

16 . Other information

Label requirements : CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. MAY BE HARMFUL IF ABSORBED THROUGH SKIN OR IF SWALLOWED. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.

Hazardous Material Information System (U.S.A.) :



Personal protection

Version : **1.06**

Notice to reader

16 . Other information

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

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