



# MATERIAL SAFETY DATA SHEET

MSDS NUMBER

2,815-3

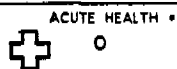
PAGE 1

97367 (4-85)

**24 HOUR EMERGENCY ASSISTANCE****GENERAL MSDS ASSISTANCE**

SHELL: 713-473-9461 CHEMTREC: 800-424-9300

SHELL: 713-241-4819



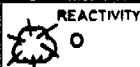
ACUTE HEALTH

0



FIRE

1



REACTIVITY

0

HAZARD RATING

LEAST - 0

SLIGHT - 1

MODERATE - 2

HIGH - 3

EXTREME - 4

\*For acute and chronic health effects refer to the discussion in Section III

**BE SAFE**  
READ OUR PRODUCT  
SAFETY INFORMATION  
... AND  
PASS IT ON  
(PRODUCT LIABILITY LAW  
REQUIRES IT)

**SECTION I**

NAME

**PRODUCT**

KRATON(R) D1107 THERMOPLASTIC RUBBER

**CHEMICAL  
NAME**

STYRENE-ISOPRENE-STYRENE BLOCK COPOLYMER

**CHEMICAL  
FAMILY**

BLDCK COPOLYMER

**SHELL  
CODE**

46007 46798

**SECTION II-A****PRODUCT/INGREDIENT****NO.****COMPOSITION****CAS NUMBER****PERCENT**

P KRATON D1107

MIXTURE

100

1 STYRENE-ISOPRENE-STYRENE BLOCK COPOLYMER

25038-32-8

&gt;98

2 TALC\*

14807-96-6

0-1.5

3 ANTIOXIDANT/STABILIZER

&lt;1

\*KRATON D1107-O GRADE DOES NOT CONTAIN COMPONENT #2.

**SECTION II-B****ACUTE TOXICITY DATA****NO.****ACUTE ORAL LD50****ACUTE DERMAL LD50****ACUTE INHALATION LC50**

P NOT APPLICABLE

BASED UPON DATA AVAILABLE TO SHELL, COMPONENTS 1 AND 3 IN THIS PRODUCT ARE NOT HAZARDOUS UNDER OSHA HAZARD COMMUNICATION (29 CFR 1910.1200).

**SECTION III****HEALTH INFORMATION**

THE HEALTH EFFECTS NOTED BELOW ARE CONSISTENT WITH REQUIREMENTS UNDER THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200).

**EYE CONTACT**

BASED ON PRESENCE OF COMPONENT 2, PRODUCT MAY CAUSE MILD MECHANICAL IRRITATION TO THE EYES.

**SKIN CONTACT**

BASED ON PRESENCE OF COMPONENT 2, PRODUCT IS PRESUMED TO BE MINIMALLY IRRITATING TO THE SKIN.

**INHALATION**

BASED ON PRESENCE OF COMPONENT 2, PRODUCT MAY CAUSE MILD MECHANICAL IRRITATION TO THE NOSE, THROAT AND RESPIRATORY TRACT.

**INGESTION**

PRODUCT IS GENERALLY CONSIDERED TO HAVE A LOW ORDER OF ACUTE ORAL TOXICITY.

DO 085455  
CONFIDENTIAL

PRODUCT NAME: KRATON(R) D1107 THERMOPLASTIC RUBBER

MSDS 2,815-3  
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SIGNS AND SYMPTOMS  
IRRITATION AS NOTED ABOVE.

AGGRAVATED MEDICAL CONDITIONS  
PREEXISTING EYE, SKIN AND RESPIRATORY DISORDERS MAY BE AGGRAVATED BY EXPOSURE TO THIS PRODUCT.

-----  
SECTION IV OCCUPATIONAL EXPOSURE LIMITS  
-----

| NO. | PEL/TWA          | OSHA<br>PEL/CEILING | TLV/TWA  | ACGIH<br>TLV/STEL | OTHER |
|-----|------------------|---------------------|----------|-------------------|-------|
| P   | NONE ESTABLISHED |                     |          |                   |       |
| 2   | 2 MG/M3*         | 20 MPPCF            | 2 MG/M3* |                   |       |

TALC USED ON PRODUCT IS NON-ASBESTOS FORM. \*RESPIRABLE DUST.

-----  
SECTION V EMERGENCY AND FIRST AID PROCEDURES  
-----

EYE CONTACT  
FLUSH EYES WITH WATER. IF IRRITATION OCCURS, GET MEDICAL ATTENTION.

SKIN CONTACT  
IF CONTACT WITH MOLTEN PRODUCT OCCURS, TREAT AS FOR ORDINARY BURNS.

INHALATION  
NOT ORDINARILY REQUIRED; REMOVE AFFECTED PERSON FROM DUSTY ENVIRONMENT.

INGESTION  
NOT ORDINARILY REQUIRED.

-----  
SECTION VI SUPPLEMENTAL HEALTH INFORMATION  
-----

ALL EVIDENCE INDICATES THAT LARGE POLYMER MOLECULES ARE NOT BIOLOGICALLY ACTIVE.

-----  
SECTION VII PHYSICAL DATA  
-----

|                                                        |                                      |                                           |
|--------------------------------------------------------|--------------------------------------|-------------------------------------------|
| BOILING POINT: NOT APPLICABLE<br>(DEG F)               | SPECIFIC GRAVITY: 0.92<br>(H2O=1)    | VAPOR PRESSURE: NOT APPLICABLE<br>(MM HG) |
| MELTING POINT: NOT APPLICABLE<br>(DEG F)               | SOLUBILITY: NEGLIGIBLE<br>(IN WATER) | VAPOR DENSITY: NOT APPLICABLE<br>(AIR=1)  |
| EVAPORATION RATE (N-BUTYL ACETATE = 1): NOT APPLICABLE |                                      |                                           |

DO 085456  
CONFIDENTIAL

PRODUCT NAME: KRATON(R) D1107 THERMOPLASTIC RUBBER

MSDS 2,815-3  
PAGE 3

APPEARANCE AND ODOR:  
SOLID, ESSENTIALLY ODORLESS.

---

SECTION VIII FIRE AND EXPLOSION HAZARDS

---

FLASH POINT AND METHOD:  
NOT APPLICABLE

FLAMMABLE LIMITS /% VOLUME IN AIR  
LOWER: N/APL UPPER: N/APL

EXTINGUISHING MEDIA  
USE WATER FOG, FOAM, DRY CHEMICAL OR CO2.

SPECIAL FIRE FIGHTING PROCEDURES AND PRECAUTIONS

MATERIAL WILL NOT BURN UNLESS PREHEATED. DO NOT ENTER CONFINED FIRE SPACE WITHOUT FULL BUNKER GEAR (HELMET WITH FACE SHIELD, BUNKER COATS, GLOVES AND RUBBER BOOTS), INCLUDING A POSITIVE PRESSURE NIOSH APPROVED SELF-CONTAINED BREATHING APPARATUS. COOL FIRE EXPOSED CONTAINERS WITH WATER.

---

SECTION IX REACTIVITY

---

STABILITY: STABLE

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

CONDITIONS AND MATERIALS TO AVOID:

MATERIALS: AVOID CONTACT WITH STRONG OXIDIZING AGENTS. CONDITIONS: PRODUCT CONTAINS RESIDUAL UNSATURATION WHICH CAN UNDERGO EXOTHERMIC OXIDATIVE DEGRADATION. ACCUMULATION OF PRODUCT IN AREAS EXPOSED TO ELEVATED TEMPERATURES FOR EXTENDED PERIODS IN AIR MAY RESULT IN SELF-HEATING AND AUTOIGNITION. SHELL'S INTERNAL GUIDELINE IS FIVE DAYS AT 200 DEG F.

HAZARDOUS DECOMPOSITION PRODUCTS

AT PROCESSING TEMPERATURES, SOME DEGREE OF THERMAL DEGRADATION WILL OCCUR. ALTHOUGH HIGHLY DEPENDENT ON TEMPERATURE/ENVIRONMENTAL CONDITIONS, A VARIETY OF DECOMPOSITION PRODUCTS MAY BE PRESENT RANGING FROM SIMPLE HYDROCARBONS (SUCH AS METHANE/PROPANE) TO TOXIC/IRRITATING GASES (CARBON MONOXIDE/DIOXIDE, ACROLEIN, HALOGENATED COMPOUNDS, ACIDS, KETONES, ALDEHYDES). SEE SPECIAL PRECAUTIONS.

---

SECTION X EMPLOYEE PROTECTION

---

RESPIRATORY PROTECTION

IF EXPOSURE MAY OR DOES EXCEED OCCUPATIONAL EXPOSURE LIMITS (SEC. IV) USE A NIOSH-APPROVED RESPIRATOR TO PREVENT OVEREXPOSURE. IN ACCORD WITH 29 CFR 1910.134 USE EITHER AN ATMOSPHERE-SUPPLYING RESPIRATOR OR AN AIR-PURIFYING RESPIRATOR FOR PARTICULATES.

OSHA HAS ESTABLISHED TRANSITIONAL OCCUPATIONAL EXPOSURE LIMITS FOR THIS PRODUCT AND/OR COMPONENTS OF THIS PRODUCT. REFER TO 29 CFR 1910.1000 FOR THESE TRANSITIONAL LIMITS AND REQUIREMENTS FOR MEETING THESE LIMITS.

PROTECTIVE CLOTHING

SAFETY GLASSES AND PROTECTIVE CLOTHING SHOULD BE WORN WHEN PRODUCT IS HEATED IN PROCESSING.

ADDITIONAL PROTECTIVE MEASURES

VENTILATION AS REQUIRED TO CONTROL DUST CONCENTRATION IN AIR. ADEQUATE VENTILATION AND/OR ENGINEERING CONTROLS ARE REQUIRED WHEN PRODUCT IS HEATED IN PROCESSING.

---

SECTION XI ENVIRONMENTAL PROTECTION

---

SPILL OR LEAK PROCEDURES

SHOVEL AND SWEEP UP OR USE INDUSTRIAL VACUUM CLEANER. AVOID GENERATING DUST CLOUDS. PUT INTO CONTAINERS FOR RECLAIMING OR DISPOSAL.

DO 085457  
CONFIDENTIAL

-----  
**SECTION XII SPECIAL PRECAUTIONS**  
-----

KRATON RUBBER HAS A TENDENCY TO ACCUMULATE STATIC CHARGE DURING TRANSPORT, HANDLING AND PROCESSING. REDUCING THE VELOCITY OF TRANSPORT WILL REDUCE CHARGING. STATIC CHARGE BUILDUP CAN BE A POTENTIAL FIRE HAZARD WHEN USED IN PRESENCE OF VOLATILE OR FLAMMABLE MIXTURES.

PRACTICE GOOD HOUSEKEEPING. DO NOT ALLOW PRODUCT TO ACCUMULATE IN PROCESSING AREA.

IN PROCESSING, DO NOT ALLOW THE TEMPERATURE TO EXCEED 450 DEG F. MAINTAIN A FIRE WATCH IF 450 DEG F IS REACHED.

AVOID VAPORS FROM HEATED PRODUCTS. ADEQUATE VENTILATION AND/OR ENGINEERING CONTROLS MUST BE EMPLOYED IN HIGH TEMPERATURE PROCESSING TO PREVENT EXPOSURE TO POTENTIALLY TOXIC/IRRITATING FUMES.

-----  
**SECTION XIII TRANSPORTATION REQUIREMENTS**  
-----

DEPARTMENT OF TRANSPORTATION CLASSIFICATION:  
NOT HAZARDOUS BY D.O.T. REGULATIONS

-----  
**SECTION XIV OTHER REGULATORY CONTROLS**  
-----

THE COMPONENTS OF THIS PRODUCT ARE LISTED ON THE EPA/TSCA INVENTORY OF CHEMICAL SUBSTANCES.

IN ACCORDANCE WITH SARA TITLE III, SECTION 313, THE EDS SHOULD ALWAYS BE COPIED AND SENT WITH THE MSDS.

-----  
**SECTION XV STATE REGULATORY INFORMATION**  
-----

THIS INFORMATION IS BEING SYSTEMATICALLY ADDED TO OUR MSDS. IT HAS PREVIOUSLY BEEN PROVIDED TO YOU IN VARIOUS WAYS, INCLUDING THE MSDS. THE NEW MSDS FORMAT IS INTENDED TO PROVIDE THE USER WITH THE INFORMATION IN A MORE CONVENIENT MANNER.

-----  
**SECTION XVI SPECIAL NOTES**  
-----

THE OCCUPATIONAL EXPOSURE LIMITS (SECTION IV) AND/OR THE RESPIRATORY PROTECTION PRECAUTIONS (SECTION X) HAVE BEEN REVISED.

PRODUCT NAME: KRATON(R) D1107 THERMOPLASTIC RUBBER

MSDS 2,815-3  
PAGE 8

-----  
THE INFORMATION CONTAINED HEREIN IS BASED ON THE DATA AVAILABLE TO US AND IS BELIEVED TO BE CORRECT. HOWEVER, SHELL MAKES NO WARRANTY, EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. SHELL ASSUMES NO RESPONSIBILITY FOR INJURY FROM THE USE OF THE PRODUCT DESCRIBED HEREIN.  
-----

DATE PREPARED: JULY 07, 1989  
-----

**BE SAFE**

READ OUR PRODUCT  
SAFETY INFORMATION ...AND PASS IT ON  
(PRODUCT LIABILITY LAW  
REQUIRES IT)

-----  
**G. A. VAN GELDER**  
-----

SHELL OIL COMPANY  
PRODUCT SAFETY AND COMPLIANCE  
P. O. BOX 4320  
HOUSTON, TX 77210

DO 085459  
CONFIDENTIAL



# ENVIRONMENTAL DATA SHEET

EDS NUMBER ► 2,815-1

PAGE 1

87448 (9-87)

|                |                                      |
|----------------|--------------------------------------|
| PRODUCT ►      | KRATON(R) D1107 THERMOPLASTIC RUBBER |
| PRODUCT CODE ► | 46007 46798                          |

## SECTION I

## PRODUCT/COMPOSITION

| NO. | COMPONENT                                | CAS NUMBER | PERCENT |
|-----|------------------------------------------|------------|---------|
| P   | KRATON D1107                             | MIXTURE    | 100     |
| 1   | STYRENE-ISOPRENE-STYRENE BLOCK COPOLYMER | 25038-32-8 | >98     |
| 2   | TALC*                                    | 14807-96-6 | 0-1.5   |
| 3   | ANTIOXIDANT/STABILIZER                   |            | <1      |

\*KRATON D1107-O GRADE DOES NOT CONTAIN COMPONENT #2.

## SECTION II

## SARA TITLE III INFORMATION

| NO. | EHS RQ (LBS)<br>(*1) | EHS TPQ (LBS)<br>(*2) | SEC 313<br>(*3) | 313 CATEGORY<br>(*4) | 311/312 CATEGORIES<br>(*5) |
|-----|----------------------|-----------------------|-----------------|----------------------|----------------------------|
|-----|----------------------|-----------------------|-----------------|----------------------|----------------------------|

BASED ON THE DATA AVAILABLE TO SHELL THIS PRODUCT CONTAINS NO SUBSTANCES SUBJECT TO REPORTING OR PLANNING REQUIREMENTS UNDER SARA TITLE III.

## FOOTNOTES

- \*1 = REPORTABLE QUANTITY OF EXTREMELY HAZARDOUS SUBSTANCE, SEC. 302
- \*2 = THRESHOLD PLANNING QUANTITY, EXTREMELY HAZARDOUS SUBSTANCE, SEC 302
- \*3 = TOXIC CHEMICAL, SEC 313
- \*4 = CATEGORY AS REQUIRED BY SEC 313 (40 CFR 372.65 C), MUST BE USED ON TOXIC RELEASE INVENTORY FORM
- \*5 = HAZARD CATEGORY FOR SARA SEC. 311/312 REPORTING
  - HEALTH H-1 = IMMEDIATE (ACUTE) HEALTH HAZARD H-2 = DELAYED (CHRONIC) HEALTH HAZARD
  - PHYSICAL P-3 = FIRE HAZARD P-4 = SUDDEN RELEASE OF PRESSURE HAZARD
  - P-5 = REACTIVE HAZARD

## SECTION III

## ENVIRONMENTAL RELEASE INFORMATION

NOT APPLICABLE

## SECTION IV

## RCRA INFORMATION

PLACE IN AN APPROPRIATE DISPOSAL FACILITY IN COMPLIANCE WITH LOCAL REGULATIONS.

DO 085460  
CONFIDENTIAL

PRODUCT NAME: KRATON(R) D1107 THERMOPLASTIC RUBBER

EDS 2,815-1  
PAGE 2

-----  
THE INFORMATION CONTAINED HEREIN IS BASED ON THE DATA AVAILABLE TO US AND IS BELIEVED TO BE CORRECT. HOWEVER, SHELL MAKES NO WARRANTY, EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. SHELL ASSUMES NO RESPONSIBILITY FOR INJURY FROM THE USE OF THE PRODUCT DESCRIBED HEREIN.  
-----

DATE PREPARED: OCTOBER 07, 1988  
-----

SHELL OIL COMPANY  
SAFETY, INDUSTRIAL HYGIENE AND ENVIRONMENT  
P. O. BOX 4320  
HOUSTON, TX 77210

FOR ADDITIONAL INFORMATION ON THIS ENVIRONMENTAL DATA PLEASE CALL  
(713) 241-2252

FOR EMERGENCY ASSISTANCE PLEASE CALL  
SHELL: (713) 473-9481  
CHEMTREC: (800) 424-9300

DO 085461  
CONFIDENTIAL

**MATERIAL SAFETY DATA SHEET**

**SECTION 01 - IDENTIFICATION**

MSDS NO. 0260 REV. 4 DATE 03/87 ALIPAL CO-436 SURFACTANT

DOMESTIC TRADE NAME: ALIPAL CO-436 SURFACTANT  
EXPORT TRADE NAME: FENOPON CO-436 SURFACTANT

CAS REGISTRY NO: 0000051-57-4  
CAS REGISTRY NAME: POLY(OXY-1,2-ETHANEDIYL), ALPHA-SULFO-OMEGA-(NONYLPHENOXY)-, AMMONIUM SALT  
SYNONYM: AMMONIUM SALT OF SULFATED NONYLPHENOXYPOLY(ETHYLENEOXY) ETHANOL

MOLECULAR FORMULA:  $C_{23}H_{43}NO_8S$   
MOLECULAR WEIGHT: 493.00

**SECTION 02 - PHYSICAL & HEALTH HAZARD INGREDIENTS**

CAS REGISTRY NO: 00000064-17-5  
CAS REGISTRY NAME: ETHANOL  
COMMON NAME: ETHYL ALCOHOL  
HAZARD %: 12.00 - 16.00  
HAZARD REFERENCE: TLV:TWA 1000 PPM  
PEL:TWA 1000 PPM

**SECTION 03 - PHYSICAL & CHEMICAL CHARACTERISTICS**

BOILING POINT: 85.00 DEG C  
VAPOR PRESSURE: ~25.00 mm Hg  
VAPOR DENSITY (AIR=1): DUE TO ~ 40% WATER AND ETHANOL  
WATER SOLUBILITY: COMPLETE  
MELTING/FREEZING POINT: < 0 DEG. C.  
APPEARANCE: CLEAR LIQUID  
SPECIFIC GRAV (WATER=1): 1.0650  
PERCENTAGE VOLATILES: APPROX 15% ETHANOL; APPROX. 25% WATER  
EVAPORATION RATE: >1.00 (BUTYL ACETATE = 1)  
PH OF SOLUTION: 8.50 - 7.50 10% SOLUTION  
ODOR: ALCOHOLIC

**SECTION 04 - PHYSICAL HAZARD DATA**

FLASH POINT: 80-82 DEG. F., (CC/PM)  
AUTOIGNITION TEMP.: NO DATA FOUND  
FLAMMABLE LIMITS: 3.30 % 19.00 % ETHANOL  
FIRE FIGHTING MEDIA: WATER / DRY CHEMICAL / CARBON D OXIDE  
SPECIAL FIRE FIGHTING PROCEDURES:  
NONE KNOWN  
FIRE/EXPLOSION HAZARDS  
NONE KNOWN  
NFPA HAZARD CODES - HEALTH/FLAMMABILITY/REACTIVITY 2 3 0  
HMIS HAZARD CODES - HEALTH/FLAMMABILITY/REACTIVITY 2 3 0

**SECTION 05 - REACTIVITY DATA**

STABILITY: STABLE  
HAZARDOUS POLYMERIZATION: WILL NOT OCCUR  
CONDITIONS TO AVOID:  
NONE KNOWN  
INCOMPATIBLE MATERIALS:  
STRONG OXIDIZING OR REDUCING AGENTS.  
HAZARDOUS DECOMPOSITION PRODUCTS:  
NONE KNOWN

**SECTION 06 - HEALTH HAZARD DATA**

**- ACUTE TOXICITY -**

ORAL TOXICITY:  
RAT LD50 8000 MG/KG  
DERMAL TOXICITY:  
NO DATA FOUND

DO 085462  
CONFIDENTIAL

MSDS NO. 0260 REV. 4 DATE 03/87 ALIPAL CO-435 SURFACTANT

**SECTION 06 - HEALTH HAZARD DATA (CONT.)**

INHALATION TOXICITY:  
NO DATA FOUND.

SKIN IRRITATION:  
RABBIT, TESTED AS 15% ACTIVE SOLUTION; PRIMARY IRRITATION INDEX: 2.29, MILD IRRITANT.

EYE IRRITATION:  
RABBIT: SEVERE IRRITANT WITHOUT A WASHOUT, MODERATE IRRITANT WITH A WASHOUT 30-SECONDS AFTER  
INSTILLATION.

SENSITIZER: NO

DOT CORROSIVE: NO

PRIMARY ROUTE(S) OF ENTRY: INHALATION / CONTACT

**- SIGNS & SYMPTOMS OF EXPOSURE -**

SYMPTOMS OF INGESTION:  
NO EFFECTS OF EXPOSURE EXPECTED.

SYMPTOMS OF INHALATION:  
WILL CAUSE IRRITATION OF MUCOUS MEMBRANES, NOSE, EYES AND THROAT. COUGHING, DIFFICULTY  
IN BREATHING.

SYMPTOMS OF SKIN CONTACT:  
CONTACT MAY CAUSE IRRITATION, REDNESS, SWELLING OR DERMATITIS.

SYMPTOMS OF EYE CONTACT:  
VAPORS SLIGHTLY UNCOMFORTABLE. SPLASHES IRRITATING. WILL CAUSE PAINFUL BURNING OR STINGING OF  
EYES AND LIDS, WATERING OF EYES AND INFLAMMATION OF CONJUNCTIVA.

**- EMERGENCY FIRST AID PROCEDURES -**

FIRST AID FOR INGESTION  
GENERAL PRECAUTIONARY MEASURES SUGGEST INDUCING VOMITING IMMEDIATELY BY GIVING TWO GLASSES OF WATER  
AND STICKING FINGER DOWN THROAT. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. CALL A  
PHYSICIAN.

FIRST AID FOR INHALATION  
REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION, PREFERABLY MOUTH-TO-MOUTH. IF  
BREATHING IS DIFFICULT, GIVE OXYGEN. CALL A PHYSICIAN.

FIRST AID FOR SKIN CONTACT:  
FLUSH SKIN WITH WATER.

FIRST AID FOR EYE CONTACT:  
IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. CALL A PHYSICIAN.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:  
NO DATA FOUND.

EXPOSURE LIMITS:  
SEE SECTION 02 FOR PHYSICAL & HEALTH HAZARD INGREDIENTS

**- OTHER TOXICITY -**

OTHER ACUTE TOXICITY: NO DATA FOUND

SUB CHRONIC ORAL TOXICITY:  
90 DAY SUBCHRONIC ORAL - RAT AND DOG, 0.5, 1 AND 2% OF DIET. DATA SHOWED NO SIGNIFICANT CHANGES  
INDICATIVE OF PHARMACOTOXIC EFFECTS. ALTHOUGH GROWTH DEPRESSION WAS OBSERVED IN THE RAT AT THE  
HIGH DOSE LEVEL AND IN THE DOG AT THE MID AND HIGH DOSE LEVELS.

SUB CHRONIC INHALATION TOXICITY: NO DATA FOUND

SUB CHRONIC MISCELLANEOUS TOXICITY: NO DATA FOUND

AQUATIC TOXICITY: NO DATA FOUND

TUMORIGENICITY: NO DATA FOUND

MUTAGENICITY: NO DATA FOUND

REPRODUCTIVE TOXICITY: NO DATA FOUND

DO 085463  
CONFIDENTIAL

MSDS NO. 0260 REV. 4 DATE 02/87 ALIPAL CO-436 SURFACTANT

**SECTION 06 - HEALTH HAZARD DATA (CONT.)**

MISCELLANEOUS TOXICITY: NO DATA FOUND

**SECTION 07 - OCCUPATIONAL CONTROL PROCEDURES**

VENTILATION:  
USE WITH ADEQUATE VENTILATION.

RESPIRATORY PROTECTION:  
NIOSH-APPROVED RESPIRATOR, WHERE TLV OR PEL MAY BE EXCEEDED.

EYE PROTECTION:  
CHEMICAL GOGGLES.

SKIN PROTECTION:  
IMPERVIOUS GLOVES.

PERSONAL HYGIENE:  
WASH THOROUGHLY AFTER HANDLING.

PROTECTIVE MEASURES DURING REPAIR/MAINTENANCE OF EQUIPMENT:  
WASH EQUIPMENT THOROUGHLY WITH STEAM OR WARM WATER UNTIL CLEAN. CHECK FOR FLAMMABLES WITH AN "EXPLOSION METER" AND ALSO CHECK THE OXYGEN LEVEL WITH AN OXYGEN METER. IN ALL CASES, FOLLOW GOOD INDUSTRIAL SAFETY PRACTICES BEFORE ENTERING EQUIPMENT.

**SECTION 08 - PRECAUTIONS FOR SAFE HANDLING, STORAGE, AND USE**

PRECAUTIONARY MEASURES:  
AVOID CONTACT WITH EYES AND SKIN. WASH THOROUGHLY AFTER HANDLING. AVOID BREATHING VAPOR. USE ADEQUATE VENTILATION. KEEP THIS CONTAINER AND VAPORS FROM THIS CONTAINER AWAY FROM HEAT, SPARKS AND FLAME. KEEP CONTAINER CLOSED.

SPILL/LEAK CLEAN-UP PROCEDURES:  
ELIMINATE SOURCES OF IGNITION. ABSORB WITH EARTH, SAND OR SIMILAR INERT MATERIAL AND DISPOSE OF WITH SOLID WASTE ACCORDING TO FEDERAL, STATE AND LOCAL REGULATIONS. FLUSH SPILL AREA WITH WATER.

DISPOSAL METHOD:  
DISPOSE OF WITH LIQUID WASTE ACCORDING TO FEDERAL, STATE AND LOCAL REGULATIONS.

EPA HAZARDOUS SUBSTANCE REPORTABLE QUANTITY: NOT LISTED

PCRA CLASS: IGNITIBLE D001

**SECTION 09 - TRANSPORTATION DATA**

- DOMESTIC DATA -  
DOT SHIPPING NAME: FLAMMABLE LIQUID, NOS  
DOT HAZARD CLASS: FLAMMABLE LIQUID  
HAZARDOUS INGREDIENT(S): ETHANOL  
UN NUMBER: 1993

- EXPORT DATA -  
EXPORT SHIPPING NAME: FLAMMABLE LIQUID, NOS  
EXPORT HAZARD CLASS: FLAMMABLE LIQUID  
HAZARDOUS INGREDIENT(S): ETHANOL  
UN NUMBER: 1993

DO 085464  
CONFIDENTIAL



# MATERIAL SAFETY DATA SHEET

MSDS NUMBER

2,388-6

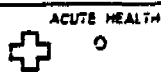
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**24 HOUR EMERGENCY ASSISTANCE****GENERAL MSDS ASSISTANCE**

SHELL: 713-473-9461 CHEMTREC: 800-424-9300

SHELL: 713-241-4819



ACUTE HEALTH

0



FIRE

1



REACTIVITY

0

HAZARD RATING

LEAST - 0

SLIGHT - 1

MODERATE - 2

HIGH - 3

EXTREME - 4

\*For acute and chronic health effects refer to the discussion in Section III

**BE SAFE**READ OUR PRODUCT  
SAFETY INFORMATION  
... AND  
PASS IT ONPRODUCT LIABILITY LAW  
REQUIRES IT**SECTION I**

NAME

**PRODUCT**

KRATON(R) D1184 THERMOPLASTIC RUBBER

**CHEMICAL  
NAME**

STYRENE-BUTADIENE-STYRENE BLOCK COPOLYMER

**CHEMICAL  
FAMILY**

BLOCK COPOLYMER

**SHELL  
CODE**

46223 46117 46897 46977 46269 46972

**SECTION II-A****PRODUCT/INGREDIENT**

NO.

COMPOSITION

CAS NUMBER

PERCENT

P KRATON D1184X THERMOPLASTIC RUBBER

MIXTURE

100

1 STYRENE-BUTADIENE-STYRENE BLOCK COPOLYMER

9003-55-8

&gt;84

2 TALC

14807-96-6

0-1

3 CALCIUM CARBONATE

1317-65-3

0-5

4 ANTIOXIDANT/STABILIZER

&lt;1

\*KRATON D1184X-0 DOES NOT CONTAIN COMPONENT 2 OR 3. KRATON D1184X-2 CONTAINS COMPONENT 2. KRATON D1184G-6 AND D1184G-8 CONTAINS COMPONENT 3.

**SECTION II-B****ACUTE TOXICITY DATA**

NO.

ACUTE ORAL LD50

ACUTE DERMAL LD50

ACUTE INHALATION LC50

P NOT AVAILABLE

BASED UPON DATA AVAILABLE TO SHELL, COMPONENTS 1 AND 4 IN THIS PRODUCT ARE NOT HAZARDOUS UNDER OSHA HAZARD COMMUNICATION (29 CFR 1910.1200).

**SECTION III****HEALTH INFORMATION**

THE HEALTH EFFECTS NOTED BELOW ARE CONSISTENT WITH REQUIREMENTS UNDER THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200).

**EYE CONTACT**

BASED ON PRESENCE OF COMPONENT 2 OR 3, PRODUCT MAY CAUSE MILD MECHANICAL IRRITATION TO THE EYES.

**SKIN CONTACT**

BASED ON PRESENCE OF COMPONENT 2 OR 3, PRODUCT IS PRESUMED TO BE MINIMALLY IRRITATING TO THE SKIN.

**INHALATION**

BASED ON PRESENCE OF COMPONENT 2 OR 3, PRODUCT MAY CAUSE MILD MECHANICAL IRRITATION TO THE NOSE THROAT AS RESPIRATORY TRACT.

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PRODUCT NAME: KRATON(R) D1184 THERMOPLASTIC RUBBER

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**INGESTION**

PRODUCT IS GENERALLY CONSIDERED TO HAVE A LOW ORDER OF ACUTE ORAL TOXICITY.

**SIGNS AND SYMPTOMS**

IRRITATION AS NOTED ABOVE.

**AGGRAVATED MEDICAL CONDITIONS**

PREEXISTING EYE, SKIN, AND RESPIRATORY DISORDERS MAY BE AGGRAVATED BY EXPOSURE TO THIS PRODUCT.

**SECTION IV**

**OCCUPATIONAL EXPOSURE LIMITS**

| NO. | OSHA<br>PEL/TWA | PEL/CEILING | ACGIH<br>TLV/TWA | TLV/STEL | OTHER |
|-----|-----------------|-------------|------------------|----------|-------|
| 2   | 2 MG/M3*        | 20 MPPCF    | 2 MG/M3*         |          |       |
| 3   | 15 MG/M3**      |             | 10 MG/M3**       |          |       |
| 3   | 5 MG/M3*        |             |                  |          |       |

TALC USED ON PRODUCT IS NON-ASBESTOS FORM. \* RESPIRABLE DUST. \*\* TOTAL DUST.

**SECTION V**

**EMERGENCY AND FIRST AID PROCEDURES**

**EYE CONTACT**

FLUSH EYES WITH WATER. IF IRRITATION OCCURS, GET MEDICAL ATTENTION.

**SKIN CONTACT**

IF CONTACT WITH MOLTEN PRODUCT OCCURS, TREAT AS FOR ORDINARY BURNS.

**INHALATION**

NOT ORDINARILY REQUIRED: REMOVE AFFECTED PERSON FROM DUSTY ENVIRONMENT.

**INGESTION**

NOT ORDINARILY REQUIRED.

**SECTION VI**

**SUPPLEMENTAL HEALTH INFORMATION**

ALL EVIDENCE INDICATES THAT LARGE POLYMER MOLECULES ARE NOT BIOLOGICALLY ACTIVE.

**SECTION VII**

**PHYSICAL DATA**

|                                                        |                                      |                                           |
|--------------------------------------------------------|--------------------------------------|-------------------------------------------|
| BOILING POINT: NOT APPLICABLE<br>(DEG F)               | SPECIFIC GRAVITY: 0.94<br>(H2O=1)    | VAPOR PRESSURE: NOT APPLICABLE<br>(MM HG) |
| MELTING POINT: NOT APPLICABLE<br>(DEG F)               | SOLUBILITY: NEGLIGIBLE<br>(IN WATER) | VAPOR DENSITY: NOT APPLICABLE<br>(AIR=1)  |
| EVAPORATION RATE (N-BUTYL ACETATE = 1): NOT APPLICABLE |                                      |                                           |

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APPEARANCE AND ODOR:  
SOLID, ESSENTIALLY ODORLESS.

-----  
SECTION VIII

FIRE AND EXPLOSION HAZARDS  
-----

FLASH POINT AND METHOD:  
NOT APPLICABLE

FLAMMABLE LIMITS /% VOLUME IN AIR  
LOWER: N/AP UPPER: N/AP

EXTINGUISHING MEDIA  
USE WATER FOG, FOAM, DRY CHEMICAL OR CO2.

SPECIAL FIRE FIGHTING PROCEDURES AND PRECAUTIONS  
MATERIAL WILL NOT BURN UNLESS PREHEATED. DO NOT ENTER CONFINED FIRE SPACE WITHOUT FULL BUNKER GEAR (HELMET WITH FACE SHIELD, BUNKER COATS, GLOVES AND RUBBER BOOTS), INCLUDING A POSITIVE PRESSURE NIOSH APPROVED SELF-CONTAINED BREATHING APPARATUS. COOL FIRE EXPOSED CONTAINERS WITH WATER.

-----  
SECTION IX

REACTIVITY  
-----

STABILITY: STABLE

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

CONDITIONS AND MATERIALS TO AVOID:  
MATERIALS: AVOID CONTACT WITH STRONG OXIDIZING AGENTS. CONDITIONS: PRODUCT CONTAINS RESIDUAL UNSATURATION WHICH CAN UNDERGO EXOTHERMIC OXIDATIVE DEGRADATION. ACCUMULATION OF PRODUCT IN AREAS EXPOSED TO ELEVATED TEMPERATURES FOR EXTENDED PERIODS IN AIR MAY RESULT IN SELF-HEATING AND AUTOIGNITION. SHELL'S INTERNAL GUIDELINE IS FIVE DAYS AT 200 DEG F.

HAZARDOUS DECOMPOSITION PRODUCTS  
AT PROCESSING TEMPERATURES, SOME DEGREE OF THERMAL DEGRADATION WILL OCCUR, ALTHOUGH HIGHLY DEPENDENT ON TEMPERATURE/ENVIRONMENTAL CONDITIONS. A VARIETY OF DECOMPOSITION PRODUCTS MAY BE PRESENT RANGING FROM SIMPLE HYDROCARBONS (SUCH AS METHANE/PROPANE) TO TOXIC/IRRITATING GASES (CARBON MONOXIDE/DIOXIDE, ACROLEIN, HALOGENATED COMPOUNDS, ACIDS, KETONES, ALDEHYDES). SEE SPECIAL PRECAUTIONS.

-----  
SECTION X

EMPLOYEE PROTECTION  
-----

RESPIRATORY PROTECTION

IF EXPOSURE MAY OR DOES EXCEED OCCUPATIONAL EXPOSURE LIMITS (SEC. IV) USE A NIOSH-APPROVED RESPIRATOR TO PREVENT OVEREXPOSURE. IN ACCORD WITH 29 CFR 1910.134 USE EITHER AN ATMOSPHERE-SUPPLYING RESPIRATOR OR AN AIR-PURIFYING RESPIRATOR FOR PARTICULATES.

OSHA HAS ESTABLISHED TRANSITIONAL OCCUPATIONAL EXPOSURE LIMITS FOR THIS PRODUCT AND/OR COMPONENTS OF THIS PRODUCT. REFER TO 29 CFR 1910.1000 FOR THESE TRANSITIONAL LIMITS AND REQUIREMENTS FOR MEETING THESE LIMITS.

PROTECTIVE CLOTHING

SAFETY GLASSES AND PROTECTIVE CLOTHING SHOULD BE WORN WHEN PRODUCT IS HEATED IN PROCESSING.

ADDITIONAL PROTECTIVE MEASURES

VENTILATION AS REQUIRED TO CONTROL DUST CONCENTRATION IN AIR. ADEQUATE VENTILATION AND/OR ENGINEERING CONTROLS ARE REQUIRED WHEN PRODUCT IS HEATED IN PROCESSING.

-----  
SECTION XI

ENVIRONMENTAL PROTECTION  
-----

SPILL OR LEAK PROCEDURES

SHOVEL AND SWEEP UP OR USE INDUSTRIAL VACUUM CLEANER. AVOID GENERATING DUST CLOUDS. PUT INTO CONTAINERS FOR RECLAIMING OR DISPOSAL.

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-----  
**SECTION XII SPECIAL PRECAUTIONS**  
-----

KRATON RUBBER HAS A TENDENCY TO ACCUMULATE STATIC CHARGE DURING TRANSPORT, HANDLING AND PROCESSING. REDUCING THE VELOCITY OF TRANSPORT WILL REDUCE CHARGING. STATIC CHARGE BUILDUP CAN BE A POTENTIAL FIRE HAZARD WHEN USED IN PRESENCE OF VOLATILE OR FLAMMABLE MIXTURES.

PRACTICE GOOD HOUSEKEEPING. DO NOT ALLOW PRODUCT TO ACCUMULATE IN PROCESSING AREA.

IN PROCESSING, DO NOT ALLOW THE TEMPERATURE TO EXCEED 450 DEG. F. MAINTAIN A FIRE WATCH IF 450 DEG. F IS REACHED.

AVOID VAPORS FROM HEATED PRODUCTS. ADEQUATE VENTILATION AND/OR ENGINEERING CONTROLS MUST BE EMPLOYED IN HIGH TEMPERATURE PROCESSING TO PREVENT EXPOSURE TO POTENTIALLY TOXIC/IRRITATING FUMES

-----  
**SECTION XIII TRANSPORTATION REQUIREMENTS**  
-----

DEPARTMENT OF TRANSPORTATION CLASSIFICATION:  
NOT HAZARDOUS BY D.O.T. REGULATIONS

-----  
**SECTION XIV OTHER REGULATORY CONTROLS**  
-----

THE COMPONENTS OF THIS PRODUCT ARE LISTED ON THE EPA/TSCA INVENTORY OF CHEMICAL SUBSTANCES.

IN ACCORDANCE WITH SARA TITLE III, SECTION 313, THE EOS SHOULD ALWAYS BE COPIED AND SENT WITH THE MSDS.

-----  
**SECTION XV SPECIAL NOTES**  
-----

THE OCCUPATIONAL EXPOSURE LIMITS (SECTION IV) AND/OR THE RESPIRATORY PROTECTION PRECAUTIONS (SECTION X) HAVE BEEN REVISED.

-----  
THE INFORMATION CONTAINED HEREIN IS BASED ON THE DATA AVAILABLE TO US AND IS BELIEVED TO BE CORRECT. HOWEVER, SHELL MAKES NO WARRANTY, EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. SHELL ASSUMES NO RESPONSIBILITY FOR INJURY FROM THE USE OF THE PRODUCT DESCRIBED HEREIN.  
-----

DATE PREPARED: JULY 18, 1989  
-----

BE SAFE

READ OUR PRODUCT  
SAFETY INFORMATION ...AND PASS IT ON  
(PRODUCT LIABILITY LAW  
REQUIRES IT)

-----  
J. C. WILLETT  
-----

SHELL OIL COMPANY  
PRODUCT SAFETY AND COMPLIANCE  
P. O. BOX 4320  
HOUSTON, TX 77210

DO 085468  
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# PIERCE & STEVENS

ADHESIVES • COATINGS

## PRINLIN® B7138A KRATON® G1657 WATER BASE DISPERSION



### GENERAL DESCRIPTION

PRINLIN B7138A is a resin modified water base dispersion of Kraton G1657. B7138A is an attractive alternative to solvent based rubber solutions because it contains less than 0.5% retained organic solvent while maintaining many of the properties typical of the base elastomer such as; low temperature flexibility, improved tensile strength, increased impact resistance, higher elasticity and added cohesive strength.

### POSSIBLE END USES:

- Sealants
- Caulks
- Coatings
- Pressure Sensitive Adhesives

### TYPICAL PHYSICALS

|                           |                                     |
|---------------------------|-------------------------------------|
| Viscosity @ 77° F         | 400 cps                             |
| Non-Volatiles             | 43.0 %                              |
| Weight per Gallon @ 77° F | 8.1 lbs                             |
| Residual Hydrocarbons     | 0.5 %                               |
| Dilution                  | Water as Required                   |
| Resin Modifier            | Wood Rosin Hydrogenated Rosin Ester |
| Coalescing Temp.          | 72° F                               |
| pH                        | 9.0                                 |

### CAUTION

This product depends on consistent control of all materials and methods to insure proper performance. Factors of variability connected with coated or impinging substrate, application methods, viscosity control, etc., require that the user subject the adhesive and all elements of the composite structure to careful preliminary testing, end-use qualification, field evaluation and effective and continuous production - quality

### EXPERIMENTAL PRODUCT DEVELOPMENT DATA

This information has been secured during the course of product development. The product is subject to modification and its properties are thus tentative. While currently offered for field and/or lab evaluation, future commercial availability cannot be assured at this time. Careful evaluation is of critical importance. Coatings and adhesives are developed using laboratory tests of limited duration, scope and applicability. Such tests, while indicative of commercial utility, are by no means infallible. Accordingly, the user is obligated to determine whether the product is suitable for the purpose intended and to carefully qualify its performance during all phases of research, development, field trial and commercialization.

**AVAILABILITY:** Samples for lab testing (qts., gals.) are readily available. Allow 3-4 weeks for quantities sufficient to permit pilot or plant trial.

### STORAGE AND HANDLING

(SEE REVERSE) FREEZABLE / METAL REACTIVE  
Storage of this product for periods exceeding 6 to 8 months should be avoided.

**FREEZING** - Renders P&S dispersions unusable. Carefully inspect all cold weather shipments.

**REDUCTION/CLEAN-UP** - Tap water is normally suitable for dilution and cleaning of wet coating. If coating has "dried on", removal with toluol or chlorinated solvents may be necessary.

**STABILITY** - Slow agglomeration can occur as dispersions age. Such agglomerates and any dried particles should be filtered out before using. Or-gandy, cheesecloth or 60-80 mesh screen (stainless) are effective for this purpose. Volume operations usually require continous filtration.

**FOAMING** - If encountered, can be effectively controlled by addition of 1/2 ounce per gallon of Neocryl AP2650 (Polyvinyl Chemical, Wilmington, MA 01887). Neocryl AP2650 or the addition of 1 to 2 ounces per gallon of Antifoam A6138A (Pierce & Stevens), a 50/50 mix of Foamkill 649 (Crucible Chemical, Greenville, SC 29606)

**PUMPS** - Avoid the use of positive displacement (gear) pumps and iron or common steel piping. Diaphragm pumps are recommended. Piping and other equipment should be of stainless or aluminum construction.

**METAL REACTIVITY** - Most dispersions are alkaline and contact with brass, copper, iron etc. should be avoided. Stainless steel, aluminum and some plastics have been useful for piping, sumps, etc.

PRINLIN is a registered trademark of Pierce & Stevens Corp.  
Kraton is a registered trademark of the Shell Chemical Co.

EPDD VT# 05/89

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## GENERAL INFORMATION

**NOTE** — This product is intended for industrial use only.

### SPECIFICATIONS

The data provided herein, whether tentative or established, represent the typical condition for this product. Such information is not intended to be used for specification limits, certification standards, or other finite acceptance criteria. To qualify as the basis for acceptance, customer specifications and test methods must be reviewed and approved by P&S.

### STORAGE AND HANDLING

This form indicates whether the product described is flammable, freezable, reactive, or of a composition known to be reactive with metals. In general, products of such nature are treated as follows:

#### FLAMMABLES (Red Label Assumed)

Store and handle in accordance with acceptable industry practice and comply with regulations as defined by the National Fire Codes, OSHA and local authorities having jurisdiction.

#### FREEZABLES (No Freeze-Thaw Stability Assumed)

Store at temperatures above 40° F. (4° C.). Storage below this temperature may cause damage. Best storage temperatures are between 60° F. (16° C.) and 80° F. (20° C.). Lower temperatures can cause increased viscosity of a temporary nature. After storage at low temperatures, allow product to warm to room temperature before agitating or using.

#### REACTIVE (Heat and Light Sensitivity)

Prolong storage life and protect from spontaneous polymerization by storing at temperatures below 77° F. (25° C.). Where noted as UV reactive, the material requires shielding from sunlight and other UV sources (e.g., fluorescent lamps).

#### METAL REACTIVITY

Many products (esp. hot melts, aqueous and reactive systems) degrade rapidly if exposed to copper, brass, black iron, or aluminum. Utilize stainless steel application and storage equipment where such sensitivity is noted as a product characteristic.

Rotate coating and adhesive stock on a first-in-first-out basis. Request your P&S representative to advise you of the anticipated shelf life of specific products under the storage conditions in your plant.

**NOTE** — Before commercializing this or any P&S product, secure documentation (e.g., MSDS) to insure your end-product and operational compliance with federal, state and municipal regulations (OSHA, EPA, FDA, etc.). Consult the indicated P&S Marketing Division for service of your specific needs in this regard.

### PACKAGING

Product packaging is specified by P&S. Non-standard packaging is discouraged and can be considered only in cases where warranted by volume and frequency of shipments. P&S can assist in developing bulk packaging-shipping methods (portable tanks, bins, tank wagons, tankcars, etc.) to facilitate the needs of customers whose requirements justify such handling. Most bulk supply methods require contractual commitments and involve scale-up from truckload intakes.

### AVAILABILITY — Commercial Products (U.S. Destinations)

Many standard products are available from factory and warehouse stocks (allow up to 10 days delivery). Various other products are made to order from ingredient materials on hand (allow up to 25 days). Certain special order products require up to 45 days for processing. Consult your P&S sales representative regarding the normal availability and shipping points for special products.

### CONTACT PIERCE & STEVENS CORP.

| LOCATION                      | DEPARTMENT                                                                                            | MAIL/ZIP                         | PHONE                            |
|-------------------------------|-------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------|
| HEADQUARTERS:<br>BUFFALO      | TECHNICAL, MANUFACTURING, GENERAL<br>ADMINISTRATIVE, CENTRAL ORDER ENTRY<br>MARKETING & SALES OFFICES | BOX 1092/14240<br>BOX 1092/14240 | 716/856-4910<br>FAX 716/856-9718 |
| BRANCHES:<br>CAROL STREAM, IL | ORDER-ENTRY — SALES & TECH SERVICE                                                                    | 245 E. KEHOE/60188               | 708/653-3800<br>FAX 708/510-0927 |
| DALLAS, TX                    | ORDER-ENTRY — SALES                                                                                   | 4525 JOSEPH<br>HARDIN DR./75236  | 214/330-9205<br>FAX 214/330-8129 |
| KIMBERTON, PA                 | ORDER-ENTRY — SALES & TECH SERVICE                                                                    | BOX 218/19442                    | 215/933-8857<br>FAX 215/933-0201 |
| MILPITAS, CA                  | ORDER-ENTRY — SALES & TECH SERVICE                                                                    | 805 SINCLAIR<br>FRONTAGE/95035   | 408/262-7331<br>FAX 408/942-1569 |
| CANADA:<br>FT. ERIE, ONTARIO  | ORDER-ENTRY — SALES & TECH SERVICE                                                                    | BOX 249/L2A5M9                   | 416/871-2724                     |

### DISCLAIMER

Neither Pierce & Stevens (P&S) nor its marketing agents shall be responsible for the use of this information, or of any product, method or apparatus mentioned. You must make your own determination of product suitability and thoroughly qualify it for serviceability, for environmental acceptability, and for impact on the health and safety of your employees and purchasers of your products. P&S warrants that the materials themselves do not infringe the claims of any United States patent, but no license is implied nor is any further patent warranty made. P&S' only obligation shall be to replace such quantity of the product which is proven to have been defective. No person is authorized to make any statement or recommendation not contained herein, and any such statement or recommendation so made shall not bind P&S.



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# PRINLIN<sup>®</sup> B7138A TECHNICAL SHEET

|                          |                                                                                                                                                                                                                                                                                                                                  |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Polymer                  | Kraton <sup>®</sup> G1657                                                                                                                                                                                                                                                                                                        |
| Polymer Type             | S - EB - S (Styrene - Ethylene Butylene - Styrene) saturated triblock copolymer, soft rubbery midblock.                                                                                                                                                                                                                          |
| % Styrene in Polymer     | 14% by weight                                                                                                                                                                                                                                                                                                                    |
| Surfactant Type          | Anionic at 5.75% weight level of solids                                                                                                                                                                                                                                                                                          |
| Resin Modification       | Hydrogenated rosin ester in the dispersion phase.                                                                                                                                                                                                                                                                                |
| FDA Status <sup>*1</sup> | Meets FDA approval under #175.105                                                                                                                                                                                                                                                                                                |
| Other properties         | PRINLIN B7138A forms a film at 72°F. This film exhibits excellent flexibility at low temperatures and high elongation. A major difference between PRINLIN B7138A and dispersions on other G series polymers is the rosin modification and low styrene content. As a result B7138A is low in modulus, exhibiting high elasticity. |
| Typical Physicals        |                                                                                                                                                                                                                                                                                                                                  |
| pH                       | 9.0                                                                                                                                                                                                                                                                                                                              |
| Viscosity                | 400 cps                                                                                                                                                                                                                                                                                                                          |
| Weight per Gallon        | 8.1                                                                                                                                                                                                                                                                                                                              |
| % Non-Volatile           | 43                                                                                                                                                                                                                                                                                                                               |
| Particle Size            | 1 - 3 microns                                                                                                                                                                                                                                                                                                                    |
| Freeze Thaw Stability    | None                                                                                                                                                                                                                                                                                                                             |
| Antifoam                 | Foamkill 649 from Crucible Chemical                                                                                                                                                                                                                                                                                              |
| Handling                 | High levels of shear may cause PRINLIN dispersions to form agglomerates. To minimize shear we recommend the use of diaphragm pumps and low shear mixers when used. During storage avoid exposure to excessive heat.                                                                                                              |

## Possible End Uses

- Sealants
- Caulks
- Coatings
- Pressure Sensitive Adhesives
- Asphalts
- Strippable Coatings

<sup>\*1</sup> FDA status should be confirmed prior to evaluation. Status will be supplied in writing upon request.  
 Kraton is a registered tradename of Shell Chemical Co.  
 PRINLIN is a registered tradename of Pierce & Stevens Corp.

MATERIAL SAFETY DATA SHEET

Sigma-Aldrich Corporation  
1001 West Saint Paul Ave, Milwaukee , WI 53233 USA

Jl 1990 version

|                                  | Sigma        | Aldrich      |
|----------------------------------|--------------|--------------|
| For Emergency Contact USA/Canada | 800-325-5832 | 800-231-8327 |
| Outside USA/Canada               | 314-771-5765 | 414-273-3850 |

CS2

Z5756

IDENTIFICATION

PRODUCT #: NAME: CARBON DISULFIDE REAGENT  
CAS #: 75-15-0

SYNONYMS

CARBON BISULFIDE \* CARBON BISULFIDE (DOT) \* CARBON BISULPHIDE \*  
CARBON DISULFIDE (ACGIH, DOT, OSHA) \* CARBON DISULPHIDE \* CARBONE  
(SUFURE DE) (FRENCH) \* CARBONIO (SOLFURO DI) (ITALIAN) \* CARBON  
SULFIDE \* CARBON SULPHIDE (DOT) \* DITHIOCARBONIC ANHYDRIDE \*  
KOHLENDISULFID (SCHWEFELKOHLENSTOFF) (GERMAN) \* KOOLSTOFDISULFIDE  
(ZWAVELKOOLSTOF) (DUTCH) \* NCI-C04591 \* RCRA WASTE NUMBER P022 \*  
SCHWEFELKOHLENSTOFF (GERMAN) \* SOLFURO DI CARBONIO (ITALIAN) \*  
SULPHOCARBONIC ANHYDRIDE \* UN 1131 (DOT) \* WEEVILTOX \* WEGLA  
DWUSIARCZEK (POLISH) \*

TOXICITY HAZARDS

RTECS NO: FF6650000

CARBON DISULFIDE

TOXICITY DATA

IHL-HMN LCLO:4000 PPM/30M  
IHL-HMN LCLO:2000 PPM/5M  
UNR-MAN LDLO:186 MG/KG  
ORL-RAT LD50:3188 MG/KG  
IHL-RAT LC50:25 GM/M3/2H

29ZWAE -,118,68  
TABIA2 3,231,33  
85DCAI 2,73,70  
GISAAA 31(1),13,66  
85GMAT -,32,82

ORL-MUS LD50:2780 MG/KG  
IHL-MUS LC50:10 GM/M3/2H  
ORL-RBT LD50:2550 MG/KG  
ORL-GPG LD50:2125 MG/KG

GISAAA 31(1),13,66  
85GMAT -,32,82  
GISAAA 31(1),13,66  
GISAAA 31(1),13,66

RF EWS, STANDARDS, AND REGULATIONS

ACGIH TLV-TWA 10 PPM (SKIN) 85INA8 5,104,86  
MSHA STANDARD-AIR:TWA 20 PPM (60 MG/M3) (SKIN) DTLVS\* 3,39,71  
OSHA PEL:8H TWA 20 PPM;CL 30 PPM;PK 100 PPM/30M/8H FEREAC 54,2923,89  
OSHA PEL FINAL:8H TWA 4 PPM (12 MG/M3);STEL 12 PPM (36 MG/M3) (SKIN)  
FEREAC 54,2923,89  
NIOSH REL TO CARBON DISULFIDE-AIR:10H TWA 1 PPM;CL 10 PPM/15M MMWR\*\*  
37(S-7),7,88  
NOHS 1974: HZD 17370; NIS 24; TNF 1074; NOS 27; TNE 24200  
NOES 1983: HZD 17370; NIS 18; TNF 689; NOS 41; TNE 44438; TFE 4881  
EPA GENETOX PROGRAM 1988, POSITIVE: SPERM MORPHOLOGY-HUMAN  
EPA TSCA CHEMICAL INVENTORY, 1989  
EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, APRIL 1990  
NIOSH ANALYTICAL METHODS: SEE CARBON DISULFIDE, 1600

TARGET ORGAN DATA

LIVER (FATTY LIVER DEGENERATION)  
PATERAL EFFECTS (SPERMATOGENESIS)  
PATERAL EFFECTS (PROSTATE, SEMINAL VESICLE, COWPER'S, ACCESSORY  
GLANDS  
EFFECTS ON FERTILITY (POST-IMPLANTATION MORTALITY)  
EFFECTS ON EMBRYO OR FETUS (FETOTOXICITY)  
EFFECTS ON NEWBORN (BEHAVIORAL)  
ONLY SELECTED REGISTRY OF TOXIC EFFECTS OF CHEMICAL  
SUBSTANCES (RTECS) DATA IS PRESENTED HERE. SEE ACTUAL  
ENTRY IN RTECS FOR COMPLETE INFORMATION.

----- HEALTH HAZARD DATA -----

A E EFFECTS

HARMFUL IF SWALLOWED, INHALED, OR ABSORBED THROUGH SKIN.  
VAPOR OR MIST IS IRRITATING TO THE EYES, MUCOUS MEMBRANES AND UPPER  
RESPIRATORY TRACT.  
CAUSES SKIN IRRITATION.  
EXPOSURE CAN CAUSE:  
DAMAGE TO THE KIDNEYS  
DAMAGE TO THE LIVER  
DAMAGE TO THE HEART  
MAY CAUSE NERVOUS SYSTEM DISTURBANCES.  
MAY CAUSE CONVULSIONS.

CHRONIC EFFECTS

OVEREXPOSURE MAY CAUSE REPRODUCTIVE DISORDER(S) BASED ON TESTS WITH  
LABORATORY ANIMALS.  
LABORATORY EXPERIMENTS HAVE SHOWN MUTAGENIC EFFECTS.

FIRST AID

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES OR SKIN WITH COPIOUS  
AMOUNTS OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED  
CLOTHING AND SHOES.  
IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL  
RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.  
IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS.  
CALL A PHYSICIAN.  
REMOVE AND WASH CONTAMINATED CLOTHING PROMPTLY.

----- PHYSICAL DATA -----

BOILING PT: 46 C

MELTING PT: -112 C  
SPECIFIC GRAVITY: 1.266  
VAPOR DENSITY: 2.67  
VAPOR PRESSURE: 400 MM @ 28 C  
200 MM @ 10.6 C

AI ARANCE AND ODOR  
COLORLESS LIQUID

----- FIRE AND EXPLOSION HAZARD DATA -----

FLASHPOINT: -29 F BY:  
AUTOIGNITION TEMPERATURE: 212 F  
LOWER EXPLOSION LEVEL: 1.3%  
UPPER EXPLOSION LEVEL: 50%

EXTINGUISHING MEDIA

WATER SPRAY.

CARBON DIOXIDE, DRY CHEMICAL POWDER, ALCOHOL OR POLYMER FOAM.

SPECIAL FIREFIGHTING PROCEDURES

WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO  
PREVENT CONTACT WITH SKIN AND EYES.

UNUSUAL FIRE AND EXPLOSIONS HAZARDS

DANGER:

EXTREMELY FLAMMABLE.

VAPOR MAY TRAVEL CONSIDERABLE DISTANCE TO SOURCE OF IGNITION AND  
FLASH BACK.

EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

----- REACTIVITY DATA -----

INCOMPATIBILITIES

OXIDIZING AGENTS

AMINES

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS

CARBON MONOXIDE, CARBON DIOXIDE

SULFUR OXIDES

----- SPILL OR LEAK PROCEDURES -----

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

EVACUATE AREA.

SHUT OFF ALL SOURCES OF IGNITION.

WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY  
RUBBER GLOVES.

ABSORB ON SAND OR VERMICULITE AND PLACE IN CLOSED CONTAINERS FOR  
DISPOSAL.

VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.

WASTE DISPOSAL METHOD

BURN IN A CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND  
SCRUBBER BUT EXERT EXTRA CARE IN IGNITING AS THIS MATERIAL IS HIGHLY  
FLAMMABLE.

OBSERVE ALL FEDERAL, STATE, AND LOCAL LAWS.

--- PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE ---

WEAR APPROPRIATE NIOSH/MSHA-APPROVED RESPIRATOR, CHEMICAL-RESISTANT  
GLOVES, SAFETY GOGGLES, OTHER PROTECTIVE CLOTHING.

SAFETY SHOWER AND EYE BATH.

USE ONLY IN A CHEMICAL FUME HOOD.

DO NOT BREATHE VAPOR.

DO NOT GET IN EYES, ON SKIN, ON CLOTHING.

AVOID PROLONGED OR REPEATED EXPOSURE.

READILY ABSORBED THROUGH SKIN.

WASH THOROUGHLY AFTER HANDLING.

TOXIC.

DO 085474  
CONFIDENTIAL

IRRITANT.  
POSSIBLE MUTAGEN/TERATOGEN.  
REPRODUCTIVE HAZARD.  
NEUROLOGICAL HAZARD.  
KEEP TIGHTLY CLOSED.  
KEEP AWAY FROM HEAT, SPARKS, AND OPEN FLAME.  
MAY EXPLODE WHEN HEATED.  
MAY DEVELOP PRESSURE.  
STENCH.  
REFRIGERATE.

REGULATORY INFORMATION

THIS PRODUCT IS SUBJECT TO SARA SECTION 313 REPORTING REQUIREMENTS.

----- ADDITIONAL PRECAUTIONS AND COMMENTS -----

SECTION 9 FOOTNOTES

CAUTION: CONTACT WITH AZIDES OR ACTIVE METALS SUCH AS SODIUM,  
POTASSIUM, ZINC, ETC., MAY CAUSE FIRES AND EXPLOSIONS.

THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT BUT DOES NOT PURPORT TO BE  
ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. SIGMA-ALDRICH SHALL NOT BE  
HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING OR FROM CONTACT WITH THE  
ABOVE PRODUCT. SEE REVERSE SIDE OF INVOICE OR PACKING SLIP FOR ADDITIONAL  
TERMS AND CONDITIONS OF SALE