IA-94
MATERIAL SAFETY DATA SHEET

CREATION DATE: JUNE 26, 1990
REVISION DATE: NOVEMBER 4, 2009

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SECTION 01: IA-94 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Duro Dyne Adhesive item #DUR016 & DUR017
PRODUCT CODE: (IA-94-1=DUR017, IA-94-5=DUR016) FORMER #15-146R

MANUFACTURER:
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SECTION 02: IA-94 COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Wt. %	CAS Number	EINECS	Classification
n-Hexane	15 - 40	000110-54-3	203-777-6	F,Xn,N; 11-38-48/20-62-65-67-51/53
Low Boiling Point Naphtha-Solvent Naphtha (petroleum), Light Aliph	10 - 30	064742-89-8	265-192-2	Xn; 65
n-Heptane	10 - 30	000142-82-5	265-192-2	F, Xi,N; 11-38-50/53-65-67
Cyclohexane	3 - 10	000110-82-7	203-806-2	F; 11
Cyclopentane	1 - 5	000287-92-3	206-016-6	F; 11

"**F**" Highly Flammable "**Xn**" Harmful "**Xi**" Irritant "**N**" Dangerous for the environment

SECTION 03: IA-94 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
IMMEDIATE CONCERNS: DANGER! Extremely flammable liquid and vapour. Vapour may cause flash fire and explosion. Harmful or fatal if swallowed. Harmful if absorbed through the skin. Pulmonary aspiration hazard. After ingestion, may enter lungs and produce damage. High vapour concentrations may cause drowsiness. Can cause eye, skin and respiratory tract irritation.

SECTION 03: IA-94 HAZARDS IDENTIFICATION Continued

POTENTIAL HEALTH EFFECTS

EYES: Can cause severe eye irritation and corneal damage.

SKIN: Causes defatting and skin irritation. Can cause dermatitis.

SKIN ABSORPTION: May be absorbed through the skin in harmful amounts.

INGESTION: Can cause gastrointestinal irritation, nausea and vomiting. Aspiration of material into the lungs may cause chemical pneumonitis, which can be fatal. Harmful or fatal if swallowed.

INHALATION: May cause nose or throat irritation. High concentrations may lead to central nervous system effects (drowsiness, dizziness, nausea, headaches, paralysis and loss of consciousness).

SIGNS AND SYMPTOMS OF OVEREXPOSURE

EYES: Liquid and vapour can severely irritate the eyes depending on type of exposure (splash, vapour) and exposure time.

SKIN: Mild to moderate skin irritant.

SKIN ABSORPTION: May be absorbed through the skin and can contribute to overall exposure. Effects are similar to CNS depression.

INGESTION: May result in central nervous system (CNS) depression with symptoms such as headaches, nausea, vomiting, diarrhea, dizziness, incoordination and unconsciousness. Aspiration of material into lungs may cause chemical pneumonitis which can be fatal.

INHALATION: High vapour concentrations may cause CNS depression with symptoms including light headedness, giddiness, nausea, drowsiness, headache, nose, throat and respiratory tract irritation, reduced appetite, confusion and unconsciousness.

ACUTE TOXICITY: High vapour concentrations may cause central nervous system (CNS) depression with symptoms including light headedness, giddiness, nausea, drowsiness, headache, nose, throat and respiratory tract irritation, reduced appetite, confusion and unconsciousness.

CHRONIC EFFECTS: damage to the central nervous system of the extremeties, peripheral neuropathy, with symptoms including numbness, tingling and weakness in the toes and fingers, sensory impairment to touch, pain, vibration and temperature, muscular weakness, blurred vision, coldness of extremeties, loss of body weight and reflexes, and even paralysis. Frequent or prolonged contact may irritate the skin and cause a skin rash (dermatitis).

CARCINOGENICITY: None known.

MUTAGENICITY: None known.

REPRODUCTIVE TOXICITY

REPRODUCTIVE EFFECTS: None known.
TERATOGENIC EFFECTS: None known

ROUTES OF ENTRY: Eye Contact, Ingestion, Inhalation, Skin Absorption and Skin Contact.

TARGET ORGANS STATEMENT: Central Nervous System (CNS)

IRRITANCY: Eyes, nose, throat, respiratory tract and skin irritation.

SECTION 04: IA-94 FIRST AID MEASURES

EYES: Immediately flush eyes with plenty of tempered water (at least 15-20 minutes) lifting upper and lower eye lids occasionally. Get immediate medical attention.

SKIN: Immediately wash skin with soap and plenty of water. Remove contaminated clothing. Get medical attention if symptoms occur. Wash or dispose of clothing before reuse.

INGESTION: Do not induce vomiting, keep person warm, quiet and get medical attention immediately. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Aspiration of this material into the lungs due to vomiting can cause chemical pneumonitis which can be fatal.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek immediate medical attention.

SECTION 05: IA-94 FIRE FIGHTING MEASURES

FLASHPOINT AND METHOD: -37°C (-35°F) TAG CC
FLAMMABLE LIMITS: 1.1 TO 8.6
AUTOIGNITION TEMPERATURE: 204°C (47.3°F) to 361°C
FLAMMABLE CLASS: Class IB
GENERAL HAZARD: Flammable liquid and vapour.
EXTINGUISHING MEDIA: Foam, dry chemical, carbon dioxide, water spray or fog.
HAZARDOUS COMBUSTION PRODUCTS : Carbon Monoxide, Carbon Dioxide, Aldehydes
EXPLOSION HAZARDS: Avoid fire, sparks, static electricity and hot surfaces. Liquid readily evaporates at room/ambient temperature. Vapours are invisible, flammable, heavier than air, and may accumulate in low areas and spread long distances. Distant ignition and flashback are possible.
FIRE FIGHTING PROCEDURES: As in any fire, wear self-contained breathing apparatus with pressure-demand, full face piece SCBA (MSHA/NIOSH approved or equivalent) and full protective gear.
SENSITIVE TO STATIC DISCHARGE: Likely to catch fire from near-by spark. Static charge may accumulate by flow or agitation. Grounding and bonding of containers is required.
SENSITIVITY TO IMPACT: None known.
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon Monoxide and Carbon Dioxide may form when heated to decomposition.

SECTION 06: IA-94 ACCIDENTAL RELEASE MEASURES

SMALL SPILL: Dike area to contain spill. Take precautions as necessary to prevent contamination of ground and surface waters. Recover spilled material on absorbent, such as sawdust or vermiculite, and sweep into closed containers for disposal. After all visible traces, including ignitable vapours have been removed thoroughly, wet vacuum the area. Do not flush to sewer. If area of spill is porous, remove as much contaminated earth and gravel, etc. as necessary and place in closed containers for disposal. Only those persons who are adequately trained, authorized and wearing the required personal protective equipment (PPE) should participate in spill response and clean-up.

LARGE SPILL: Keep spectators away. Only those persons who are adequately trained, authorized and wearing the required personal protective equipment (PPE) should participate in spill response and clean-up. Ventilate the area by natural means or by explosion proof mechanical means (i.e. fans). Know and prepare for spill response before using or handling this product. Eliminate all ignition sources (flames, hot surfaces, portable heaters and sources of electrical, static, or frictional sparks). Dike and contain spill with inert material (e.g. sand, earth). Transfer liquids to covered and abelled metal containers for recovery or disposal, or remove with inert absorbent. Use only non-sparking tools and appropriate PPE. Place absorbent diking materials in covered metal containers for disposal. Prevent contamination of sewers, streams and groundwater with spilled material or used absorbent.

SECTION 07: IA-94 HANDLING AND STORAGE

GENERAL PROCEDURES: For professional or industrial use only. Follow label instructions. Keep out of the reach of children. Not for consumption. No smoking. Do not breath vapours. Avoid contact with body. Turn off all pilot lights, flames, stoves, heaters, electric motors, welding equipment and other sources of ignition. Empty containers must not be washed and re-used for any purpose. Contact lens wearers must wear protective eye wear around chemical vapours and liquid. Wash hands thoroughly after handling. Flammable vapours may cause flash fire or ignite explosively. To prevent build-up of vapours, use adequate natural and/or mechanical ventilation (e.g. open all windows and doors to achieve cross ventilation). Containers may be hazardous when empty. Never use welding or cutting torch on or near container. Do not cut, drill, grind or expose containers to heat, sparks, static electricity or other source of ignition. Explosion may occur causing injury or death.
HANDLING: Use adequate ventilation and appropriate respiratory protection to avoid breathing vapours when cover is removed. Ground and bond all equipment when handling flammable solvent-borne material.
STORAGE: Keep container closed when not in use. Store in a dry well ventilated area, out of the sun and away from ignition sources. Do not remove or deface label. Prevent water or moist air from entering container.
STORAGE TEMPERATURE: 15.5°C (60°F) Minimum to 35°C (95°F) Maximum.
SHELF LIFE: 1 year from manufacture date.

SECTION 08: IA-94 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)					
		EXPOSURE LIMITS			
		OSHA PEL		ACGIH TLV	
CHEMICAL NAME		ppm	mg/m^3	ppm	mg/m^3
n-Hexane	TWA	500 ppm [1]	1800 mg/m3 [1]	50 ppm	176 mg/m3
	STEL	NL [2]	NL [2]	NL [2]	NL [2]
Low Boiling Point Naphtha – Solvent Naphtha (petroleum), Light Aliph.	TWA	400 ppm	NL	400 ppm	NL
	STEL	NL [2]	NL [2]	NL [2]	NL [2]
n-Heptane	TWA	500 ppm [1]	2000 mg/m3 [1]	400 ppm	1640 mg/m3
	STEL	NL [2]	NL [2]	500 ppm	2050 mg/m3
Cyclohexane	TWA	300 ppm [1]	1050 mg/m3 [1]	100 ppm	334 mg/m3
	STEL	NL [2]	NL [2]	NL [2]	NL [2]
Cyclopentane	TWA	NL [2]	NL [2]	600 ppm	1720 mg/m3
	STEL	NL [2]	NL [2]	NL [2]	NL [2]

Footnotes:
1. OSHA limits per 29 CFR 1910.1000 Table Z-1 & Z-2
2. NL = Not Listed

ENGINEERING CONTROLS: Provide sufficient explosion proof mechanical (general and/or local exhaust) ventilation to maintain exposure below the occupational exposure limit and exposure concentration.
PERSONAL PROTECTIVE EQUIPMENT:
EYES AND FACE: Wear safety glasses with side shields (or goggles) or a full face respirator.
SKIN: Wear chemical protective clothing & boots to prevent repeated or prolonged skin contact.
RESPIRATORY: NIOSH/MSHA approved air purifying respirator with an organic vapour cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known or any other circumstances where air purifying respirators may not provide adequate protection. A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.
PROTECTIVE CLOTHING: Wear chemical resistant gloves, such as nitrile rubber.
WORK HYGIENIC PRACTICES: Wash hands thoroughly after use.

SECTION 09: IA-94 PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid
ODOR: Solvent-like
COLOR: Red
PERCENT VOLATILE: 67.6
Notes: by weight
BOILING POINT: 49.5°c (121°F) to 98°C (209°F)
FLASHPOINT AND METHOD: -37°C (-35°F) TAG CC
SOLUBILITY IN WATER: Slight
EVAPORATION RATE: > 1.0 (n-Butyl Acetate=1)
DENSITY: 6.33 lbs/gal
SPECIFIC GRAVITY: 0.759
(VOC): 513.100 gr/L EPA Method 24 VOC
Notes: Photochemically Reactive Only VOC: 513.1 gr/L
COMMENTS: 0.84 lb VHAP/lb Solid
27.1% by weight HAP

SECTION 10: IA-94 STABILITY AND REACTIVITY

STABLE: Yes
HAZARDOUS POLYMERIZATION: No
STABILITY: Stable
POLYMERIZATION: Product will not undergo polymerization.
CONDITIONS TO AVOID: Avoid fire, sparks, static electricity and hot surfaces.
POSSIBILITY OF HAZARDOUS REACTIONS: None Expected.
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide and carbon dioxide may form when heated to decomposition.
INCOMPATIBLE MATERIALS: Strong oxidizing agents, strong acids and strong bases.

SECTION 11: IA-94 TOXICOLOGICAL INFORMATION

ACUTE

Chemical Name	ORAL LD_{50} (rat)	DERMAL LD_{50} (rabbit)	INHALATION LC_{50} (rat)
n-Hexane	25000 mg/kg	No data	48000 ppm
Low Boiling Point Naphtha - Solvent Naphtha (petroleum), Light Aliph.	> 2000 mg/kg	> 2000 mg/kg	> 5000 ppm (1-hr dose)
n-Heptane	> 2000 mg/kg	> 2000 mg/kg	> 5000 ppm (1-hr dose)
Cyclohexane	12705 mg/kg	No data	No data
Cyclopentane	11400 mg/kg	No data	106 gr/cub m

CARCINOGENICITY
IARC : Not Applicable
NTP : Not Applicable
OSHA : Not Applicable
Notes : None
IRRITATION: Eyes, nose, throat, respiratory tract irritation.
CORROSIVITY: Not Applicable
SENSITIZATION: Not Applicable
NEUROTOXICITY: Not Applicable
GENETIC EFFECTS: Not Applicable
REPRODUCTIVE EFFECTS: Not Applicable
TERATOGENIC EFFECTS: Not Applicable
MUTAGENICITY: Not Applicable

SECTION 11: IA-94 TOXICOLOGICAL INFORMATION Continued

SYNERGISTIC MATERIALS: The neurotoxic effects of n-hexane vapour can be enhanced in rats by both methyl ethyl ketone (MEK) and lead acetate but are decreased by toluene. Toluene and xylene prevent testicular atrophy by n-hexane.

SECTION 12: IA-94 ECOLOGICAL INFORMATION

ENVIRONMENTAL DATA: This product contains components that will normally float on water. These components may be harmful to aquatic organisms and may cause long term adverse effects in the aquatic environment.
ECOTOXICOLOGICAL INFORMATION: Contains components that are potentially toxic to freshwater and saltwater ecosystems.
BIOACCUMULATION/ACCUMULATION: Contains components with the potential to bio-accumulate.

SECTION 13: IA-94 DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Dispose of in accordance with all local, state and federal regulations.

SECTION 14: IA-94 TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)
PROPER SHIPPING NAME: Adhesives
PRIMARY HAZARD CLASS/DIVISION: 3
UN / NA NUMBER: 1133
PACKING GROUP: II
NAERG: 128
MARINE POLLUTANT #1: None
OTHER SHIPPING INFORMATION: Contains (n-Hexane, n-Heptane)

SPECIAL SHIPPING NOTES: If individual container size is less than 1.3 gallons, the proper shipping name is :
ORM-D Consumer Commodity
Non-Regulated

SECTION 15: IA-94 REGULATORY INFORMATION

UNITED STATES
DOT LABEL SYMBOL AND HAZARD CLASSIFICATION

Flammable Liquid
** for container > 1.3 gallons (4.9 Liters) **

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)
FIRE: Yes **PRESSURE GENERATING:** No **REACTIVITY:** No **ACUTE:** Yes **CHRONIC:** Yes

EPCRA SECTION 313 SUPPLIER NOTIFICATION

Chemical Name	Wt.%	CAS
n-Hexane	15 – 40	000110-54-3
Cyclohexane	3 – 10	000110-82-7

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

Chemical Name	Wt.%	CERCLA RQ
n-Hexane	15 – 40	5,000 lbs
Cyclohexane	3 – 10	1,000 lbs

SECTION 15: IA-94 REGULATORY INFORMATION Continued

TSCA (TOXIC SUBSTANCE CONTROL ACT)

Chemical Name	CAS	TSCA SECTION
n-Hexane	000110-54-3	
Low Boiling Point Naphtha – Solvent Naphtha (petroleum), Light Aliph.	064742-89-8	
n-Heptane	000142-82-5	12b,
Cyclohexane	000110-82-7	
Cyclopentane	000287-92-3	

CLEAN AIR ACT

Chemical Name	Wt.%	CAS
n-Hexane	15 – 40	000110-54-3

CANADA
WHMIS HAZARD SYMBOL AND CLASSIFICATION

Flammable Liquid - Class B Div 2

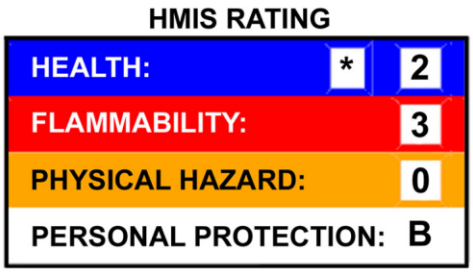
Toxic - Class D Div 2 Sub Div B

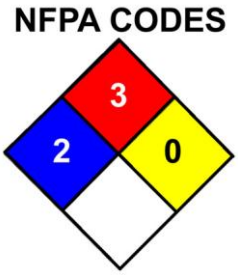
SECTION 16: IA-94 OTHER INFORMATION

PREPARED BY: Duro Dyne Canada Inc. 514-422-9760

INFORMATION CONTACT: (781) 878-7015

REVISION SUMMARY: This MSDS replaces Duro Dyne Canada February 7, 2008 MSDS.





GENERAL STATEMENTS:
Keep out of reach of children.
For professional or industrial use only.
If you cannot read, or do not understand all directions, cautions, and warnings, do not use this product.
For spray applications, use only with approved equipment.

**** The information given and the recommendations made herein apply to our product(s) alone and are not combined with other product(s). Such are based on our research and on data from other reliable sources and are believed to be accurate. No Guarantee of accuracy is made. It is the purchaser's responsibility before using any product to verify this data under their own operating conditions and to determine whether the product is suitable for their purposes. ****