Chemical Products Safety Information Sheet
FISPQ

Product name	FISPQ #: **0010**
Sealer for Patches	Page: 1 of 9
	Revision: **Jan/2005**

1. Company and product identification	
■ *Product name:*	**Sealer for Patches SV – 01**
■ *Product identification internal code:*	**270280**
■ *Company name:*	**BORRACHAS VIPAL S/A**
■ *Address:*	**Rua Buarque de Macedo, 365 95320-000 Nova Prata - RS - Brazil**
■ *CNPJ (Legal Entity National Register)*	**87870952/0001-44**
■ *Company's phone number:*	**(54) 242-1666**
■ *Emergency number:*	**(54) 242-1666**
■ *Fax:*	**(54) 242-1736**
■ *E-mail:*	**vipal@vipal.com.br**

2. Composition and ingredients information		
■ *Preparation*:	**Adhesive based on trichloroethene solvent, loads, rubber additives and synthetic rubber**	
■ *Chemical nature*:	**Chlorine hydrocarbon**	
■ *Ingredients and impurities contributing for danger*:		
Chemical or generic name	*Concentration or concentration range*	*Classification and danger labeling*
Trichloroethene	**≅ 80% (p/p)**	**Toxic Substances - 6**

o **Identificação Internacional**

Substance	EINECS Nº	Risk Phrases	Safety Phrases	Indication(s) of Danger and Symbol(s)
Trichloroethylene	**201-167-4**	**R45, R36/38, R52/53, R67.**	**S53, S45, S61.**	T 

Frases de Risco	***Frases de Segurança***
R45: May cause cancer; *R67: Vapors can cause giddiness and drowsiness.* *R36/38: Irritating to eyes and skin;* ***R52/53: Nocive** to aquatic organisms and may cause long-term adverse effects in the aquatic environment*	*S45: In case of accident or if you feel inwell seek medical advice immediately (show lable where possible);* *S53: Avoid exposure. obtain special medical instruction before use;* *S61 Avoid release to the environment. Refer to special instructions/Safety data sheet;*

T – Toxic

3. Danger identification	
■ *Major dangers*:	**Liquid and its vapors are toxic.**
■ *Product effects*:	
➪ *Adverse effects to human health*:	**Vapors that are inhaled are irritating and CNS-depressant.**
➪ *Effects on environment*:	**Product's air-borne vapors make the environment explosive and toxic. The product and water resulting from fire fighting are harmful to flora and fauna. Part of the product spilled in the water will evaporate. The product spilled on the soil may partly evaporate and partly be lixiviated and percolate, contaminating the water table, which therefore limits its use. Biodegradation speed will depend on weather conditions, dilution, and existing microorganisms.**
➪ *Physical and chemical dangers*:	**Its vapors are toxic and inflammable.**
➪ *Specific dangers*:	**Toxic product.**
■ *Major symptoms*:	**<u>Resulting from inhalation</u>: dizziness, unconsciousness, headache, nausea. <u>Resulting from skin contact</u>: Dryness, irritations and dermatitis.**
■ *Chemical product classification*:	**Toxic substance.**
■ *Emergency overview*:	**<u>Upon leakage</u>: Immediately ventilate and isolate the area.**

	<u>Upon fire</u>: Although the product is not inflammable, keep it away from ignition sources.

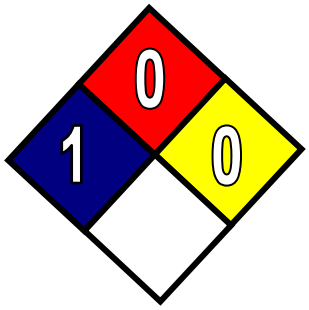
4. First-aid measures	
■ *First-aid measures*:	
⇨ *Inhalation*:	**Remove victims to fresh air and keep them quiet and warm. Perform artificial respiration, when necessary. Refer them to a physician.**
⇨ *Skin contact*:	**Take off contaminated clothes. Do not rub the affected parts. Wash with abundant water and soap. Refer them to a physician.**
⇨ *Eye contact*:	**Wash with abundant water. Refer them to a physician.**
⇨ *Ingestion*:	**Induce vomit and, after that, administer mineral oil and magnesium sulphate-diluted solution. Refer them to a physician.**
■ *Actions that should be avoided*:	**Wash skin using solvent. Do not administer epinephrine or vascular stimulants.**
■ *Short description of major symptoms and effects:*	**Airway, skin, eye and mucosa irritation and discomfort due to smell.**
■ *First-aid provider protection and/or notes for physicians:*	**First-aid providers should use all the individual-protection equipment that is recommended in this sheet, according to the existing scenario. Central Nervous System (CNS) depressor**

5. Fire-fighting measures	
■ *Appropriate extinction means*:	**Although it is not inflammable, on contiguous fire use chemical-powder (PQS), chemical-foam, or CO2 sprinkles. Use water-mist spout to cool down adjacencies.**
■ *Inappropriate appropriate extinction means*:	**Water on flames.**
■ *Specific dangers*:	**Contiguous fire may generate intense emanation of toxic vapors.**
■ *Special methods*:	**Under contiguous fire, remove containers from the area on fire, if this is possible without any risks.**
■ *Fire-fighters protection*:	**Use autonomic mask to enter in closed environment.**

6. Control measures for spilling or leakage

Product name	FISPQ #: **0010**
Sealer for Patches	Page: 3 of 9
	Revision: **Jan/2005**

■ *Personal precautions*:	
➪ *Removal of ignition sources*:	**On contiguous fire, eliminate all ignition sources, prevent from sparks and flames, and do not smoke in the risk area. Isolate all leakages of ignition sources.**
➪ *Dust control*:	**Does not apply, since it is liquid.**
➪ *Inhalation and mucosa-, eyes- and skin-contact prevention:*	**Use impermeable boots, clothes and gloves; airtight goggles for chemical products and adequate respiratory protection.**
■ *Precautions regarding the environment*:	
➪ *Alarm system*:	**Surround the area with restraint barriers or trenches. Hinder the leakage, if this is possible without any risks. Do not put the spilled material on the way of any public drainage systems. Absorb using earth, or any other absorbent material. Prevent from contaminating water streams and springs. Water entrainment should take into account posterior treatment of the contaminated water. Avoid performing this entrainment.**
■ *Cleaning methods*:	
➪ *Recovery*:	**Collect the product in a duly identified, well-sealed emergency container. Keep recovered product for posterior disposal.**
➪ *Neutralization*:	**Not necessary; this product has pH almost neutral.**
➪ *Disposal*:	**Do not dispose of it in regular garbage cans. Do not dispose of it in sewage systems or water streams. Confine, when possible, for posterior recovery or disposal. Final disposal shall be accompanied by an expert, and pursuant to the environmental legislation in force in the community.**
➪ *Secondary danger prevention*	**Inappropriate disposal may affect soil, and by percolation, degrade water quality in the water table.**

7. Handling and storage	
■ *Handling*:	
➪ *Technical measures*:	
- *Workers' exposure prevention*:	**Keep the work setting ventilated to avoid higher vapor concentration than that tolerable. Provide workers with skin and eye protection to prevent from direct contact with the product.**
- *Fire and explosion prevention*:	**Keep the work setting ventilated to keep vapor concentration out of explosiveness limits. Use anti-sparking tools and cover system's conducting elements that are in contact with the product with earth to avoid ignition.**
- *Precautions for safe handling*:	**Keep the work setting ventilated to prevent from vapor formation higher than tolerated and to avoid contamination due to contact with other products.**
➪ *Instructions for safe handling*:	**Provide local exhausting ventilation, whenever the processes require it. Avoid high room temperatures.** **Avoid contact with other products.**
■ *Storage*:	
➪ *Appropriate technical measures*:	**Keep the product in the original container.**
➪ *Storage conditions*:	
- *Appropriate*:	**In a well-ventilated place at room temperature; away from oxidizing agents, ignition and heat sources to avoid degradation and fire, although it is unlikely.**
- *To be avoided*:	**Heat, sparks and high shelves.**
- *Risk signaling*:	**Pursuant to NFPA 704 rule – National Fire Protection Agency:** **Health: 1** **Inflammability: 0** **Reactivity: 0** 

	Special: -
	Identify using toxic substance symbology 
- *Incompatible products and materials*:	**Strong oxidants, such as liquid chlorine and concentrated oxygen.**
➪ *Safe package materials*:	
- *Recommended*:	**Original manufacturer's package.**
- *Inappropriate*:	**Any other packages.**

8. Individual exposure and protection control

■ *Engineering control measures*: **Keep the work setting ventilated to keep vapor concentration limits under the warned tolerance limits. At open settings, when handling with it, position yourself in front of the wind to avoid inhalation.**

■ *Specific control parameters*:

➪ *Limits for occupational exposure*:

Ingredient	# CAS	NR - 15				ACGIH				
		TL-MP		VM		TLV – TWA (8-hour exposure)		TLV - STEL		
		ppm	mg/m³	ppm	mg/m³	ppm	mg/m³	ppm	mg/m³	exposure period
Trichloroethene	**79-01-6**	**78**	**420**	**117**	**630**	**50**	**269**	**100**	**537**	**5 min up to 300 ppm**

CAS = Chemical Abstracts Service
NR 15 = Regulating rule for unhealthy activities and operations
ACGIH = American Conference of Governmental and Industrial Hygienists
TL – MP = Tolerance limit – weighted average
TLV – TWA = Threshold Limit Value – Time Weighted Average
TLV – STEL = Threshold Limit Value – Short Term Exposure Limit
N.F. = Not found

Biologic indicators:

Ingredient	*Toxicologic data*			
	Oral DL_{50} (mg/kg)	*Dermal DL_{50}*	*Inhalative CL_{50}*	*IDHL*
Trichloroethene	**4900, mice**	**29000mg/kg, mice**	**8450 ppm, 4h, mice**	**N.D.**

IDHL = Immediately Dangerous to Life or Health
DL_{50} = The dose of a chemical substance that kills 50% of a group of animals from the same species when administered through the same via (oral or dermal) (DL= Lethal Dose)
CL_{50} = Lethal atmospheric concentration of a chemical substance that kills 50% of a group of exposed animals within a given period of time (CL = Lethal Concentration)
CNS = Central Nervous System
N.F. = Not found

■ *Recommended monitoring procedures*:

Ingredient	*Tolerance limit*		*Methods to assess contamination*	
	no air	*IBMP*	*no air*	*biologic*
Trichloroethene	**50ppm**	**300mg/g**	**Monitor 3500 or 3520 by 3M; Colorimetric Detector Tube MSA/Auer 215405**	**Total trichlorocompounds dosage in urine. (NR-7/IBMP = 300mg/g creat.)**

IBMP = maximum biologic rate permitted (NR-7 MTb)

■ *Appropriate individual protection equipment*:

➪ *Respiratory protection*:	**Ventilation to keep exposure below TL (tolerance limit). Respirator with chemical filter for organic vapors, code A, brown color, for low concentrations. In cases of very high-proportion damages in confined settings without ventilation, autonomic respiration equipment or sent-air set.**
➪ *Hands protection*:	**PVA or rubber nitrile, buthyl or neoprene gloves, where direct contact with the product is a threat.**
➪ *Eyes protection*:	**Goggles or facial protection whenever there is the risk of sprinkles.**
➪ *Skin and body protection*:	**PVA or nitrile, buthyl or neoprene rubber apron or impermeable overall, whenever there is direct contact with the product.**
■ *Special precautions*:	**Avoid massive exposure to vapors. Chemical products should be handled with by qualified, skilled people. In places where chemical products are manipulated, workers' exposure should be monitored, as described in the PPRA (Environmental Risk Prevention Program).**
■ *Hygiene-related measures*:	**Clothes, gloves, shoes, EPIs should be cleaned before being used again. Always use for personal hygiene: water, soap and cleansing creams. Wash hands before using the bathroom, eating or drinking. Do not eat where you work Do not use gasoline, diesel oil or any other petroleum-derived solvent for personal hygiene. Good operational and industrial hygiene procedures help reduce risks at handling with chemical products.**

9. Physicochemical properties	
■ *physical state*:	**Liquid**
■ *Form*:	**Liquid**
■ *Color*:	**black**
■ *Smell*:	**Sweetish, similar to chloroform**
■ *pH*:	**Not significant**
■ *Specific temperatures or temperature ranges at which changes in the physical state occur*:	
➪ *Distillation range*:	**Above 87℃ (at 760 mmHg)**
■ *Decomposition temperature*:	**410℃, decomposition products inflame**
■ *Point of glow*:	**There is no glow under trial conditions.**
■ *Explosiveness limits superior - inferior*:	**41 - 11%**
■ *Vapor pressure*:	**50mmHg at 20℃, 500mmHg at 70℃**
■ *Vapor density*:	**4.53 (air = 1)**
■ *Density*:	**1.42 to 1.45 (water = 1)**
■ *Solubility (indicate solvent(s))*:	**Soluble in organic solvents**
■ *Evaporation rate*:	**300 (butyl acetate = 100)**
■ *Viscosity*:	**2610 to 3110 cP**

10. Stability and reactivity
■ *Specific conditions*:

➪ *Instability*:	**Stable product under normal conditions of use. Avoid contact with strong oxidant chemical products. Storage temperatures higher than 40℃ are harmful to the product.**
➪ *Dangerous reactions*:	**Reaction with strong oxidizing chemical products (chlorates, peroxides, acids and others). Self-ignition at 410℃**
■ *Conditions to be avoided*:	**Heat and ignition sources, closed settings.**
■ *Incompatible materials or substances*:	**Strong oxidants such as peroxides, liquid chlorine and concentrated oxygen**
■ *Need for adding additives and inhibitors*:	**Stable, therefore it does not need additives and inhibitors.**
■ Dangerous products from decomposition:	**By forced combustion: hydrochloric acid, chlorine, phosgene, acetylene chloride, dichloroacetic acid and carbon dioxide.**

11. Toxicologic information	
■ *Information according to the different exposure manners*:	
➪ *Acute toxicity*:	**Inhalation: dizziness, diplopia, facial and neck muscle paralysis, death due to respiratory arrest and heart failure in more severe situations.** **Skin contact: Skin contact causes dryness, and may cause irritation and dermatitis.** **Eye contact: vapors cause eye irritation.** **Ingestion: vomit, diarrhea, headache, cyanosis, numbness, lack of motor coordination, and in severe cases, death due to cardiovascular collapse.**
➪ *Local effects*:	**Inhalation: it may cause superior airway irritation with wet cough (mucous secretion).** **Skin contact: irritation and dryness.** **Eye contact: irritation with tearing and congestion.** **Ingestion: it may cause severe gastric lesions.**
➪ *Sensitization*:	**In individuals with allergic rhinitis it makes nasal mucosa sensitive.**
➪ *Chronic toxicity*:	**Inhalation: dizziness, headache, nausea, euphoria, vision and sleep disorders, irritability and loss of appetite.** **Skin contact: it may produce dryness dermatitis.** **Eye contact: tearing, irritation ocular, conjunctivitis, sinusitis, cough and bronchitis.**
➪ *Toxicologically synergic effects*:	**Unknown.**
➪ *Specific effects*:	**Non-carcinogenic, non-mutagenic, non-teratogenic, non-embryotoxic product.**
■ *Substances causing effects*:	
➪ *Additives*:	**Unknown.**
➪ *Potentiation*:	**Unknown.**

12. Ecologic information	
■ *Effects on environment, behavior, and product impact*:	
➪ *Mobility*:	**In water medium: although it is little soluble, the major part is deposited on the sub-aquatic table, thus creating a concentrated source of continuous contamination.** **In soil medium: solvents percolate, and they may reach water tables.** **In atmosphere medium: solvents evaporate over time.**

➪ *Persistence/degradability*:	**Water solvents will tend to accumulate on sub-aquatic tables, thus creating a concentrated source of continuous contamination.** **Percolated solvents in the soil will remain unaltered for undetermined time.**
➪ *Bioaccumulation*:	**It does not bioaccumulate**
➪ *Expected behavior*:	**Spilled or applied, solvents will tend to evaporate, and will dissipate in the atmosphere, preferably near the soil, due to its density, which is higher than that of the air.**
➪ *Impact on environment*:	**If the product is spilled in the water, its solvents will damage water life until they decompose.** **Its solvents, once they are distributed on the soil by percolation, may damage flora, fauna and water tables.** **In the atmosphere, solvent vapors may contribute for the greenhouse effect.**
➪ *Ecotoxicity*:	**Air: solvent vapors are harmful for the environment.** **Water: may provide water with unwanted qualities, thus impairing its use.** • **Benzene: as a less probable component of this product, its maximum limit for waters Class 1, 2 and 3 established at 0,01 mg/l;** • **floating materials: established as being virtually absent in waters Class 1, 2, 3, 4, 5, 6, 7 and 8;** • **oils and Greases: established as being virtually absent in waters Class 1, 2, 3, 5 and 7, and iridescences are tolerated for waters Class 4, 6 and 8;** **for special class water, there is no tolerance for any kind of contaminating agents.** **Source: Resolution CONAMA # 20, dated from June 18, 1986.** **Soil: Its solvents may affect the soil, and, by percolation, contaminate waters in the water table.**

13. Considerations on treatment and disposal	
■ *Treatment and disposal methods*:	
➪ *Product*:	**Product that is not used for its adhesive function should be leaked from the container, and its solvents should be evaporated in ventilated setting. Solid residues, if any, should be kept in a covered place, in sealed containers, in good conditions, identified, and referred to treatment in a site duly licensed by the competent environmental agency.**
➪ *Product remainders*:	**Product's remainders should be kept in a covered place, in sealed containers, in good conditions, identified, and referred to treatment in a site duly licensed by the competent environmental agency.**
➪ *Utilized package*:	**Do not reuse containers. Empty packages should be kept in a covered place, in sealed containers, in good conditions, identified and referred to treatment in a site duly licensed by the competent environmental agency.**

14. Transportation information

■ *National and international regulations*:

➪ *Land and river transport*:

							In emergency cases		
Number ONU	Appropriate name for shipping	Risk class	Risk Number	Package group	Special provisions	Exempt quantity	EPI	EmS Guide	Kit
1710	**Trichloroethene** (dispersion**)**	**6.1**	**60**	**III**	**N.F.**	**100 kg**	**A**	**74**	**1**

➪ *Sea transport:*

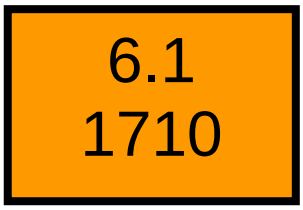
Number ONU	Appropriate name for shipping	Risk class	Risk Number	Package group	Special provisions	Exempt quantity	Emergency Guide
1710	**Trichloroethylene** (dispersion**)**	**6.1**	**N.F.**	**III**	**N.F.**	**5 liter**	**F-A, S-A**

➪ *Air transport:*

Number ONU	**1710**
Appropriate name for shipping	**Trichloroethylene** (dispersion**)**
Class	**6.1**
Danger labeling	**Toxic**
Package group	**III**

Maximum quantity per internal package on passenger/cargo airplanes	**0.5 liter** (Y605), IP3
Maximum quantity per external package on passenger/cargo airplanes	**2 liter**, external package **4G**
Maximum quantity per internal package on passenger/cargo airplanes	**5 liter** (605), IP3
Maximum quantity per external package on passenger/cargo airplanes	**60 liter**, external package **4G**
Maximum quantity per internal package on cargo airplanes	**10 liter** (612), IP3
Maximum quantity per external package on cargo airplanes	**220 liter**, external package **4G**
Practical Guide for Emergency Response(ERG Code-ICAO)	**6A**

Precaution measures and specific conditions for transportation

➪ *Land, River and Sea transport:*	**Smoking is forbidden near packages during handling. Using gas lighting near packages is forbidden. In addition, devices and equipment capable of provoking ignition of products or their gases or vapors should not be used.**
■ *Additional regulations*:	**For quantities above 333 kg of this product, transported in a vehicle, it is mandatory: inflammable risk label (lozenge - figure below) and safety sign (rectangle - figure below) externally fixed on the vehicle; EPI and equipment for emergencies; trained driver; product's emergency sheet; license given by the competent environmental agency for the transportation of dangerous products. It is prohibited to carry passengers in the vehicle without having the respective EPI kits (Equipamento de Proteção Individual [Individual Protection Equipment]).**  

15. Regulations	
■ *Regulations*:	
➪ *R – Phrases*	R40 – Possible risks of irreversible effects
➪ *S – Phrases*	S23 – Do not breathe vapour S36/37 – Wear suitable protective clothing and gloves
➪ *Information about risks and safety, as described in the label*:	1 - Use it with appropriate ventilation and get protected by using a mask with organic vapor filter. 2 - Avoid repeated, prolonged contact with skin. Use impermeable gloves. 3 – This product should not be ingested; if this occurs, do not induce vomit. If the person is conscious, make him drink water or milk and refer to specialized medical assistance and show the package. 4 – Use goggles to protect from sprinkles 5 – Keep it away from children and animals. 6 – Explosive product if changes in the pressure happen. 7 - Package should not be incinerated, reused, or perforated. STORAGE: should be stored in ventilated, dry places, away from heat or ignition (sparks) sources and under atmospheric pressure.

16. Additional information	
■ *Examples*:	
➪ *Special needs for training*:	**The user should be warned to keep the place of utilization well ventilated.**
➪ *Recommended use and potential restrictions to the chemical product*:	**Recommended for gluing repair ribbons RV-02 on bicycle's inner tubes.**
➪ *References*:	• **Manual de Autoproteção para Manuseio e Transporte Rodoviário de Produtos Perigosos [Self-Protection Manual for Handling and Road Transport of Dangerous Products] – July/1997 – Mercosul Edition;** • **International Maritime Dangerous Goods Code – IMO - 2002 Edition;** • **Dangerous Goods Regulations - IATA – 44th Edition - 2003;** • **Toxicity and Safe Handling of Rubber Chemicals Fourth Edition, 1999, RAPRA Technology Ltda;** • **Toxicologia Industrial [Industrial Toxicology], 1997, Roberto Charles Góes;** • **Occupational Medicine and Health Guidelines - Collected Writings, 40th Edition, 1998;** • **Internet:** **http://www.osha.gov ;** **http://www.acgih.org/home.htm ;** **http://www.chemfinder.com ;** **http://www.cas.org ;** **http://ntp-server.niehs.nih.gov/cgi/iH_Indexes/All/iH_All_Frames.html ;** **http://ptcl.chem.ox.ac.uk/MSDS/mels.html ;** **http://www.osha-slc.gov/dts/Chemicalsampling/toc/toc_Chemsamp.html ;** **http://www.atsdr.cdc.gov/toxprofiles/tp3.html;** **http://www.nfpa.org.** **www.uvigo.es/servicios/prevencion/ Etiquetaxe%20substancias.ppt** **http://ecb.jrc.it/esis/esis.php?PGM=ein&DEPUIS=autre** • **NBR 14725 – Chemical product safety information sheet - FISPQ, July 2001, ABNT: Associação Brasileira de Normas Técnicas [Brazilian Association of Technical Rules];** • **Follow-up Manual of Product, Chlorine Solvents, Dow;** • **Toxicology Basics, Seizi Oga, 2nd edition, 2003.**